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USERS' GUIDE

FOR

COMMUNICABLE DISEASE
PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J. S. Hand) under Contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE
Communicable Disease Program Evaluation

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INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates five ways to evaluate your communicable disease programs — from a cost-efficient reporting system to program and outbreak cost analyses. The evaluation methodologies are a result of the two-year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The goal of the evaluation project is to provide public health program administrators with practical, efficient evaluation methods that they could apply to their department's program. The result of that goal is this Users' Guide.

Scope of Communicable Disease Evaluation - This evaluation covers a representative sample of five diseases:

- Measles
- Tuberculosis
- Hepatitis A
- Salmonella
- Giardia

Public health departments are responsible for such a great number of communicable diseases — from Amebiasis to Whooping Cough — that an evaluation could not cover more than a few. This sample represents differing epidemiologies and surveillance procedures.

Each evaluation methodology is designed to smoothly fit into your health department's existing programs and to produce clear and immediately useful data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's programs and data. You may need to modify some parts of the evaluation to fit your programs' features, or expand the evaluation to other disease programs.

Each section of the Guide shows Missoula's test results, discusses evaluation procedures, reviews evaluation models, and provides any forms used to collect data. Program cost analysis worksheets, communicable disease reporting forms and other documents are copy-ready.

Changes from Original Evaluation Plan - An evaluation plan is a brief outline of proposed work. Several parts of the Communicable Disease Evaluation Plan proved to be infeasible, so were dropped and other parts were changed:

1. Evaluation Objective 1, School Immunization Law data — Figures are not consistent from year to year. The law changed in 1981, making earlier data inconclusive. Dropped.

2. Evaluation Objective 3, Test of Three Reporting Options, Four Experimental Groups of Physicians — Changed to one reporting system which incorporates telephone, mail, and computer reports from three different groupings of physicians.
3. Evaluation Objective 4, Cost/Benefit of Communicable Disease Programs — The Center for Disease Control in Atlanta does not have cost/benefit data for the five diseases this evaluation covers. Some information is available about the costs of outbreaks (especially salmonella), but straight cost/benefit information is rare. Authors do not like putting costs on health or human lives. Dropped.

SECTION 1

COMMUNICABLE DISEASE REPORTING - AN EFFECTIVE AND COST-EFFECTIVE SYSTEM

Results - Communicable Disease Reporting in Missoula County increased from an estimated 50% with the old, passive system to 85% with the new, active reporting system. In addition, health department-physician relations are markedly improved. The Department strengthened its surveillance procedures and reaction time significantly.

The Missoula Health Department, like many other public health agencies, previously had a passive reporting system. It was common to hear about cases of communicable diseases through the medical grapevine days or weeks after diagnosis. While asking physicians about the old reporting system, many admitted they did not report communicable diseases and some were not familiar with reporting procedures at all.

Estimated Costs Based on Missoula's Program - These costs represent .5% of Missoula's total yearly budget and are based on 103 regularly reporting physicians (mail and telephone reporters) (or 52 physicians' offices).

| <u>Regular (Not Start-Up) Costs</u> | | |
|-------------------------------------|---------------------------|------------|
| Personnel: | Director @ 7 hrs/mo. | \$100 |
| | Coordinator @ 40 hrs/mo. | 400 |
| | Assistant @ 28 hrs/mo. | <u>150</u> |
| | (Total 75 hrs/mo.) | \$650 |
| Postage/ Printing: | Reminder Post Cards/mo. | \$ 15 |
| | Physicians Bulletin | |
| | 1/mo. unless special case | 20 |
| | Printing-forms/mo. cost | <u>5</u> |
| | | \$ 40 |
| Total monthly average cost \$690 | | |

Discussion - The active reporting system was specifically designed to overcome past problems with reporting, yet be cost-effective. The most important parts of this system are:

1. Office personnel, not physicians, are asked to report.
2. A combination of telephone and mail reporters.
3. Direct feedback to physicians and their staffs through the monthly "Physician Bulletin."

The ideal reporting system would be to telephone each physician's office weekly. This reporting system recognizes that public health departments do not have enough personnel nor money to support that type of reporting, so the design calls for the majority of staff time to be spent collecting data from reporters who see the majority of reportable diseases. Proportionally less staff time is spent collecting mail reports from physicians who are less likely to see substantial numbers of communicable diseases.

School absentee rate reporting can act as a back-up by giving advance warning of outbreaks, especially influenza.

Initially, the reporting system took substantial amounts of time as health department staff visited each doctor's office to explain the system and distribute forms and disease lists. Increased physician/staff-health department cooperation and rapport, however, was worth the extra effort.

Recommendations - (1) Maintain close contact with physicians and their staffs and ask for their feedback regularly, (2) send the Physician Bulletin out promptly, (3) hold regular communicable disease reporting team meetings and training, (4) send post card reminders to mail reporters with funny quotes ("Murphy's Laws and Corollaries" are good) to insure that office personnel remember to report each week, (5) send each school a copy of their absentee rate data (so they know you actually use their information), and (6) do not have an outbreak when you just begin your new reporting system — it can be very confusing.

Methodology - Procedures and forms may be used either as they appear, as examples, or modified to fit your individual program.

1. Reporting Protocol — The blue-print of the reporting system. All staff should thoroughly understand reporting procedures. (Pages 1.4 to 1.10)
2. Reporting Forms — To be filled out daily by physician's office personnel. (Note that "Immediately Reportable Diseases" are phoned to the health department within 24 hours of diagnosis.) The form is designed to be folded and mailed to the health department address pre-printed on the back. (Page 1.11)
3. List of Reportable Diseases — Should comply with the State Department of Health and Environmental Science's regulations. Missoula's list also reflect some local requirements. (Page 1.12)
4. Reminder Post Card — Sent to each mail reporter weekly. We recommend printing funny sayings on the cards to insure nurses or receptionists notice each card and remember to report. (Example page 1.13)

5. Physician Bulletin — Mailed to all reporting physicians and their staffs at least monthly. Should be short and easy to skim and reflect local physicians' information desires. Physicians report they are inundated with daily mail and will read only relevant and concise pieces. (Example page 1.14)
6. Letter Announcing New Reporting System — Sent to all physicians in the community who will see cases of communicable diseases on a fairly regular basis. The letter announces that the reporting procedure is being changed and lets the physicians and their staffs know that a Health Department representative will be coming to see them. (Page 1.15 to 1.16)
7. Letter to Specialists — This letter goes to dentists, radiologists, surgeons, podiatrists and other specialists who are very unlikely to see cases of communicable diseases. The letter lets them know they are expected to report, but recognizes that they probably will not see any reportable diseases. (Page 1.17)
8. "How to Report" Instructions — At least one copy to each reporting office within one month after a personal visit from a Health Department representative. The instructions remind offices to report and serve to further clarify procedures. Since physicians' offices have a fairly high staff turnover, sending out new copies each six months is helpful. (Page 1.18 to 1.19)
9. Communicable Disease Case Study Record — Form filled out by the Communicable Disease Assistant after receiving a communicable disease report and given to the Coordinator for investigation and followup. (Page 1.20)
10. "Contagious Communique" — Form completed if someone other than the Communicable Disease Assistant receives a telephone report of a communicable disease. It is to be routed to the Assistant immediately. (Page 1.21)
11. Communicable Disease Logs — Three logs which record all incoming reports.
 - (1) The Communicable Disease Log is a central record of all diseases reported to the health department and their outcome.
 - (2) The Telephone Log is a brief record of weekly calls made by the health department to phone reporters.
 - (3) The Mail Log is a brief record of weekly reports by reporters who mail in their communicable disease logs. (Pages 1.22 to 1.24)

COMMUNICABLE DISEASE

REPORTING PROTOCOL

PROGRAM DESCRIPTION

Montana physicians are to promptly report cases of communicable disease to the Health Department (Section 50-1-202(19) MCA). Historically, the level of communicable disease (CD) reporting has been low and it is generally acknowledged that the currently used, passive system does not give an accurate count of disease incidence. Better success has been realized by variations of an active system when the Health Department takes an active role in contacting physicians' offices.

Reporting procedures are specialized for each of three types of physicians' offices:

- Group I: Approximately two-thirds of the physicians' offices will be provided with reporting forms (Appendix A) to be filled out daily and mailed to the Health Department at the end of the reporting week (defined as Tuesday to Monday). Large clinics may report weekly by providing a copy of their computer weekly reports.
- Group II: Approximately one-third of the physicians, known as Index Physicians, will be telephoned each Tuesday for their weekly report. This group represents a cross-section of doctors most likely to see significant numbers of reportable communicable diseases.
- Group III: The remainder (surgeons, radiologists, dentists, etc.) will be sent a letter with a list of reportable diseases and requested to call the Health Department if they should diagnose a reportable communicable disease. No attempts will be made to continue active contact with this group because of the improbability of their seeing cases of reportable diseases.

Lists of reporters are compiled on a "physician unit" concept, *i.e.*, if three physicians practice together and have the same office staff, then all three will be considered to be one physician unit, while 10 physicians who practice in a clinic and have separate office staffs will be considered 10 physician units.

The list of Group I and II primary reporters includes:

- internists
- general practitioners
- gynecologists/obstetricians
- pediatricians
- hematologists/oncologists
- dermatologists
- urologists
- ear, nose and throat specialists

The list of Group III reporters includes*:

- surgeons
- allergists
- anesthesiologists
- optometrists/opthamologists
- psychiatrists/psychologists
- cardiovascular physicians
- radiologists
- dentists
- neurologists
- orthopedic specialists
- podiatrists

PROCEDURES

Group I - Mail a letter to Group I physicians telling them about the new reporting system (letter sample 1.15--1.16). Make initial visits to each physician unit in Group I and II to explain the reporting procedure and make arrangements to begin the system. The visit has three purposes -- first, to follow up the letter in order to stress the importance of the reporting system; second, to answer any questions and iron out any problems; and third, to record the name of the staff member who will be responsible for actual reporting (usually the office nurse or receptionist). Provide each office with at least one list of reportable diseases and a supply of reporting forms.

Each physician unit in Group I is responsible for completing a reporting form each week (the reporting week is defined as Tuesday through Monday to avoid busiest days and times physicians offices may be closed) and mailing it to the Health Department. The reporting form is constructed so that it may be folded in three parts, stapled, stamped and mailed to the address pre-printed on the back.

*Physicians who practice more than specialties listed in Group III may be included in Group I or II because they also practice internal medicine, etc.

The Health Department CD Assistant (or backup) will be responsible for compiling all incoming data in a log and forwarding reports to the CD Coordinator by 10:00 Friday morning. The Coordinator will then assign followup to nurses and/or sanitarians as necessary. In addition, the CD Assistant will take phoned reports of Immediately Reportable Diseases and give them to the Coordinator (or backup) within one hour for followup.

Group II - Send a letter explaining the reporting system to each physician in Group II and ask them to assign a doctor's assistant or nurse to take the telephone call from the Health Department each Tuesday. Make a personal visit to further familiarize the office staff with the reporting procedures. Be sure each office has at least one list of reportable diseases and knows the reporting procedure. Group II will be responsible for calling the Health Department immediately after diagnosing an Immediately Reportable Disease.

The CD Assistant will call each physician unit Tuesday morning and ask for their communicable disease report for the preceeding week. Record the results of the calls in the CD Log and give disease reports to the CD Coordinator by 10:00 Friday morning for review and assignment.

Group III - According to health professionals, this group of physicians is unlikely to provide primary care for communicable diseases, so efficiency demands that resources be used for Groups I and II. Send a letter to physicians in this group (letter sample page 1.17) reminding them to report communicable diseases should they see any on the list of reportable diseases included with the letter. Group III will report directly to the Health Department by phone. The CD Assistant will be responsible for receiving those calls and routing routine reports to the CD Coordinator by 10:00 Friday morning or Immediately Reportable Diseases to the Coordinator within one hour.

HEALTH DEPARTMENT INTERNAL PROCEDURES

The following flow charts show the communicable disease reporting process for: (1) routine mailed reports, (2) routine telephone reports, and (3) Immediately Reportable Disease reports. Staff responsibilities and time frames are included.

The list of Group I and II primary reporters includes:

- internists
- general practitioners
- gynecologists/obstetricians
- pediatricians
- hematologists/oncologists
- dermatologists
- urologists
- ear, nose and throat specialists

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- surgeons
- allergists
- anesthesiologists
- optometrists/ophthalmologists
- psychiatrists/psychologists
- cardiovascular physicians
- radiologists
- dentists
- neurologists
- orthopedic specialists
- podiatrists

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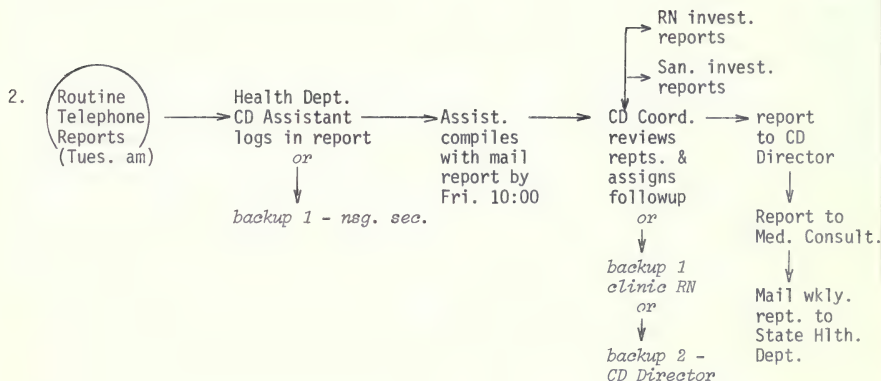
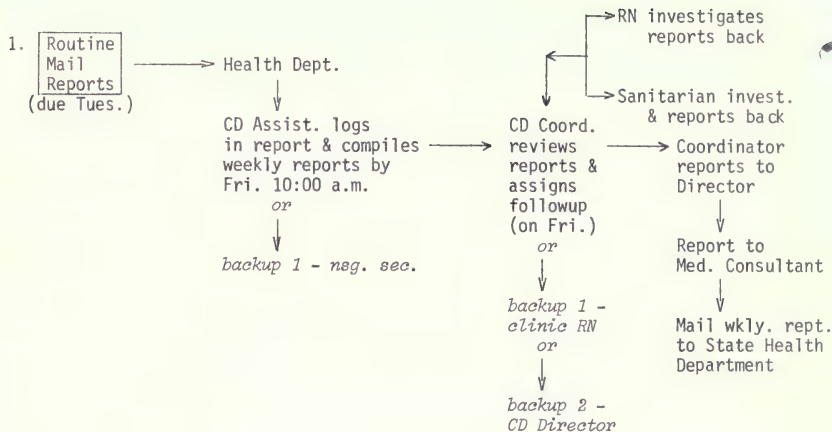
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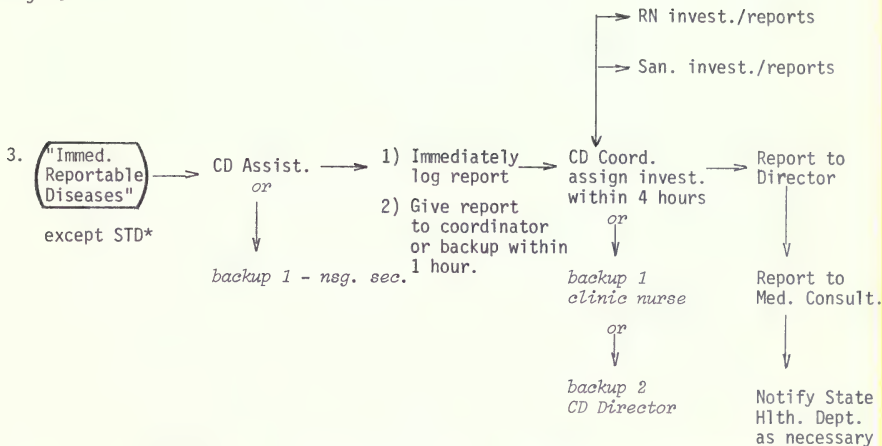
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HEALTH DEPARTMENT INTERNAL PROCEDURES

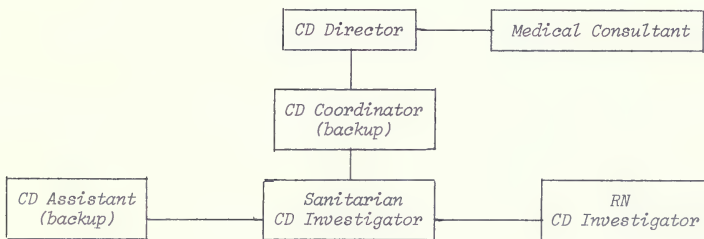
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(*To insure confidentiality, all STD reports will be immediately routed to the Out-patient Clinic and noted in the log by case number.)

ORGANIZATIONAL CHART



-----Job Description-----

CD Director

- Has over-all responsibility for CD reporting system.
- Given report each week of number of cases of CD, results of investigation.
- Responsible for changes in policy and procedures of CD reporting.
- Reports to Board of Health, Health Officer and Medical Consultant.
- Cooperatively assigns investigative staff with the CD coordinator as needed.
- Responsible to make policy decisions and changes in cooperation with the CD coordinator.

-----Job Description-----

Medical Consultant

- Serves as general advisor to CD director and coordinator.
- Available for consultation.
- May assist with writing and/or reviewing physician bulletin.
- May assist with physician relations and compliance with system.
- Will be given weekly CD reports for review

-----Job Description-----

CD Coordinator

- Has thorough knowledge of CD and epidemiology.
- Responsible for collecting reports of CD and assigning them for investigation to the appropriate Health Department division and for accepting and analyzing returning investigation reports.
- Report to the CD Director on a regular weekly basis.
- Writes articles for the physician bulletin as necessary.
- Responsible to see that the physician bulletin is compiled and mailed out.
- Responsible for answering physicians' questions and making call-backs as needed.
- Responsible to make policy decisions and changes jointly with CD director.
- Assigns staff to the reporting program in cooperation with the CD director.

-----Job Description-----

CD Assistant

- Responsible for calling physicians' offices each Tuesday for their CD report of the preceeding week.
- Responsible for receiving mailed reports of CD, logging them in, and giving them to the CD coordinator.
- Receives and logs in "immediately reportable diseases" from physicians' offices and, within one hour, gives reports to CD coordinator or backup.
- Types, prints and mails reporting reminders to Group I physicians.
- Types, prints, and mails physician bulletin as instructed by CD coordinator.
- May compile and present statistics as directed by CD coordinator or director.
- Other duties as assigned.

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 West Alder
Missoula, MT 59801
721-5700 ex 383

It is the responsibility of physicians to notify the Health Department of reportable diseases (Section 50-1-202 (19) MCA). Help us to help you protect the health of the community by your prompt reporting.

| Date Today | Disease | Patient name, address/phone | Age | Sex | Date Onset | Comments | H.D. followup? | |
|---------------|---------|-----------------------------|-----|-----|---------------|----------|-------------------|----|
| | | | | | | | YES | NO |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Numbered Diseases: Missoula County Disease Emphasis: **Diphtheria* *Hepatitis, A & B* *Salmonella*
Encephalitis **Measles* *Shigella*
**Foodborne* **Meningitis,* **Syphilis*
Illness *Bacterial* *TB*
Giardia *Mumps* *Typhoid Fever*
**Gonorrhea* *Rubella* *Others (State CD List)*

vised MCCHD
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* = IMPORTANT. Report by phone immediately!

front ↑

back ↓

The Missoula City-County Health Department
301 West Alder
Missoula, Montana 59801

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801

MISSOULA
CITY-COUNTY HEALTH DEPARTMENT

Reportable Diseases and Conditions

These communicable diseases must be reported to the Health Department at least weekly. Important: those diseases which are starred must be reported to the Health Department immediately by phone (721-5700, ext. 383) because of their immediate hazard to the community and their potential for rapid spread. The Health Department welcomes reporting of other diseases as per the professional judgment of the medical community.*

| | | |
|-------------------------|--|---|
| Amoebiasis | Legionnaires' Disease | Salmonella |
| Anthrax | Leprosy | Shigellosis (Bacillary Dysentery) |
| *Botulism | Leptospirosis | *Smallpox |
| Brucellosis | *Lymphogranuloma Venerum | *Syphilis |
| | Malaria | |
| *Chancroid | *Measles | Tetanus |
| *Cholera | Meningitis, aseptic | Trichinosis |
| | *Meningococcal Disease | Tuberculosis |
| *Diphtheria | *Meningitis, bacterial | Tularemia |
| | (other than meningococcus) | *Typhoid Fever |
| Encephalitis, all types | Mumps | *Typhus, louse-borne |
| *Food-borne Illness | Ornithosis (Psittacosis) | *Yellow Fever |
| Giardiasis | Paratyphoid Fever | |
| *Gonorrhea | *Plaque | Whooping cough-like illness (Pertussis) |
| *Granuloma Inguinale | *Poliomyelitis | |
| Hepatitis, A and B | *Rabies, animal and human, if persons given anti-rabies vaccine for animal bites | |
| | *Relapsing Fever, louse-borne | |
| | Rocky Mountain Spotted Fever | |
| | Rubella (German Measles) | |

Reportable outbreaks or suspected outbreaks by number only

| | | |
|--------------------------------|----------------------------|--|
| Chickenpox | Nosocomial Disease | Scabies |
| Epidemic Gastroenteritis | Pediculosis (lice) | Streptococcal Infections |
| Epidemic Kerato-conjunctivitis | Ringworm (Dermatophytosis) | Suspected Non-Polio Enteroviral Infections |
| | | Swimmers' Itch |
| Influenza | | Water-borne Disease |

(1)

(2)

(3)

YOUR WEEKLY REMINDER -

TIME TO MAIL IN YOUR GREEN COMMUNICABLE DISEASE
REPORTING FORM AFTER COMPLETING MONDAY'S REPORT.

THANK YOU!

*No matter which way you ride, it's uphill
and against the wind.
First Law of Bicycling*

The Missoula City-County Health Department ^{sup}

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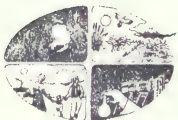
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MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801

PHYSICIAN BULLETIN

Example

The purpose of this bulletin is to provide up-to-date communicable disease information to physicians interested in local trends and disease occurrence. The Missoula City-County Health Department will provide this service as part of its communicable disease reporting system.

The surveillance system is up and running and is apparently working well. Thank you for your and your staff's cooperation.

As a point of clarification, the diarrheal illness category should include all diarrheal illnesses including those associated with allergic reactions.

It will be necessary for physicians to report gonorrhea cases rather than relying on lab reports, because labs do not have patient name and address and/or phone number. The Health Department's standard followup procedure on gonorrhea cases starts with a call to the diagnosing physician.

CAMPYLOBACTER FETUS SSP JEJUNI

Within a period of less than two months (between March and May) *Campylobacter fetus ssp jejuni* was isolated from stools of 10 patients with diarrheal illness. One additional case was diagnosed on the basis of household contact with another case. Contact with dogs was the apparent source of two of the cases and a suspect water supply was involved in another. Raw milk was a possible factor in one case. Three cases were in children; the remainder were adults under the age of 50. One patient has an auto-immune condition and another has a wide range of allergies which may have affected the severity of diarrheal illness experience.

A recent study of *Campylobacter* infections in Colorado identified significant environmental contact in about half of the cases. CDC reports that *Campylobacter* infections have been as common as those of *Salmonella* and *Shigella* and should be considered as a possible diagnosis in diarrheal illness.

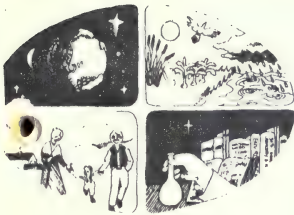
SALMONELLA

Six *Salmonella* isolations were made in the past week. Investigation of the cases is not complete, but raw milk may be a factor.

The Health Department welcomes feedback on the Physician Bulletin in the form of comments, suggestions, and additional disease information.

Bill DeCout
CD Coordinator

June 9, 1980



...MAKING A DIFFERENCE ...

TO MAIL REPORTERS

TO: Missoula Physicians
FROM: The Missoula City-County Health Department
RE: Reporting of Communicable Diseases

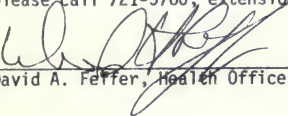
In order to make it easier for Missoula physicians to meet requirements for reporting communicable diseases, the Health Department is changing reporting procedures. Your office will be asked to daily fill out a brief reporting sheet (copy attached) which was designed to replace the current yellow cards. At the end of the reporting week (Tuesday to Monday), your office will be sent a post card reminder to mail the sheet to the Health Department. We ask that you report diseases posing an immediate hazard to the community to the Department immediately by phone.

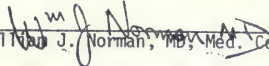
Physicians told us that they would like to be kept better informed of disease incidence in the local area, so you will be provided with current local information in the form of a "Physician Bulletin" that will be part of the post card reporting reminder.

Since studies have shown that busy doctors often do not report disease incidence, we ask that you assign a staff member (receptionist, RN, DA) to be in charge of reporting. Because staff file patient records and check patients in and out, they seem better able to report disease incidence consistently.

A representative of the Health Department will contact your office next week to finalize the procedure and to answer questions that you and your staff may have about the new procedure. We have enclosed a copy of this letter so that you may pass it on to the member of your staff whom you would like to be in charge of reporting so they may be familiar with their role and the new procedure.

We look forward to working with you and your staff to more closely and accurately track the incidence of communicable disease in Montana. If you have any questions, please call 721-5700, extension 379.


David A. Feffer, Health Officer


William J. Norman, MD, Med. Consultant

encl.
cc: staff

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

June 9, 1980

...MAKING A DIFFERENCE ...

TO TELEPHONE REPORTERS

TO: Missoula Physicians
FROM: The Missoula City-County Health Department
RE: Reporting of Communicable Disease

In order to make it easier for physicians to meet requirements for reporting communicable diseases, the Health Department is changing reporting procedures. Your office will be asked to daily fill out a brief reporting sheet (copy attached) which was designed to replace the currently used yellow cards. At the end of the reporting week (Tuesday to Monday), the Health Department will call the assigned staff member in charge of reporting to ask for your office's report over the phone. For those diseases which pose an immediate hazard to the community, we ask that your office call us immediately.

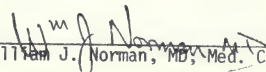
Physicians have told us that they would like to be kept better informed of disease incidence in the local area, so the reporting system was designed to provide you with current local information (Physician Bulletin) as part of the post card reporting reminder.

Since studies have shown that busy doctors often do not report disease incidence, we ask that you assign a staff member (receptionist, RN, DA) to be in charge of reporting. Because staff file patient records and check patients in and out, they seem to be better able to report disease incidence consistently.

A representative of the Health Department will contact your office next week to finalize the procedure and to answer questions that you and your staff may have about the new procedure. We have enclosed a copy of this letter so that you may pass it on to the member of your staff whom you would like to be in charge of reporting so they may be familiar with their role and the new procedure.

We look forward to working with you and your staff to more closely and accurately track the incidence of communicable disease in Montana. If you have any questions, please call 721-5700, extension 379.


David A. Feffer, Health Officer


William J. Norman, MD, Med. Consultant

encl.
cc: staff

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

June 25, 1980

TO: Missoula Medical Specialists
FROM: The Missoula City-County Health Department
RE: Reporting of Communicable Diseases

The Health Department is working to improve the reporting of communicable diseases in Missoula. Although you probably see very few reportable diseases in your practice, we ask that either you or a member of your staff continue to phone the Health Department when you diagnose any of the 56 diseases shown on the attached list.

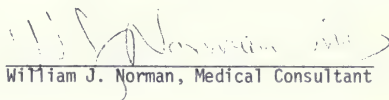
A new reporting procedure has been established for the rest of the medical community who see communicable diseases (internists, pediatricians, GP's, etc.) which involve their office staff recording cases of reportable diseases daily on a brief form and then mailing the reports to us weekly. (Some selected physicians offices will receive a phone call from the Health Department to receive their report.)

We will be carefully tracking the incidence of disease in the community and providing physician feedback to doctors when information of interest becomes available -- outbreaks, unusual conditions and trends. If you would like to receive a copy of the "Physician Bulletin," please mail back the enclosed post card.

Thank you for your continued help in reporting communicable diseases. We look forward to strengthening our ties with Missoula physicians.



David A. Feffer, Health Officer



William J. Norman, Medical Consultant

EX. 383



...MAKING A DIFFERENCE ...

TO MAIL REPORTERS

HOW TO REPORT COMMUNICABLE DISEASES

- I. Call "Immediately Reportable Diseases" to the Health Department (721-5700, ext. 383) within 24 hours of diagnosis. These diseases are potentially dangerous to the community because of their potential for rapid spread or communicability.

| | | |
|---------------------|----------------------------|---------------------|
| Botulism | Lymphogranuloma Venerum | Rabies |
| Chancroid | Measles | Relapsing Fever, |
| Cholera | Meningococcal Disease | louse-borne |
| Diphtheria | Meningitis, bacterial | Smallpox |
| Foodborne Illness | (other than meningococcus) | Syphilis |
| Gonorrhea | Plague | Typhoid Fever |
| Granuloma Inguinale | Poliomyelitis | Typhus, louse-borne |
| | | Yellow Fever |

- II. Each day, write patient name, disease, etc., on the green "Communicable Disease Reporting Form" provided by the Health Department. Report flu, chickenpox, and diarrheal illness by number only. Use a tally mark (III) for each case. If you diagnose (or strongly believe) a patient has one of these diseases, be sure to report it under this category.

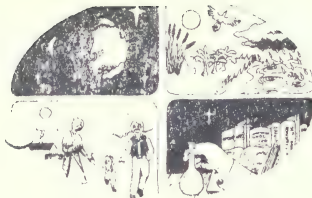
Then, at the end of the reporting week (which goes from Tuesday to Monday), you will receive a post card reminder to mail in your report to the Health Department. Fold the green form, staple it and mail to the address already printed on the back (only if something to report).

A complete list of reportable diseases is attached. Please make the list easily available in your office. A shorter, "Missoula-specific" list is printed on each green reporting form.

The diseases you report to the Health Department are investigated if they pose a danger to the public's health; they are carefully analyzed to see if trends are developing, and they are reported to the State Health Department and included in total Montana information.

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

Bill DeCou
Communicable Disease Coordinator
12/80



...MAKING A DIFFERENCE...

TO TELEPHONE REPORTERS

HOW TO REPORT COMMUNICABLE DISEASES

- I. Call "Immediately Reportable Diseases" to the Health Department (721-5700, ext. 383) within 24 hours of diagnosis. These diseases are potentially dangerous to the community because of their potential for rapid spread or communicability.

| | | |
|---------------------|----------------------------|---------------------|
| Botulism | Lymphogranuloma Venerum | Rabies |
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| Foodborne Illness | (other than meningococcus) | Syphilis |
| Gonorrhea | Plague | Typhoid Fever |
| Granuloma Inguinale | Poliomyelitis | Typhus, louse-borne |
| | | Yellow Fever |

- II. Each day, write patient name, address, etc., on the green "Communicable Disease Reporting Form" provided by the Health Department. Report flu, chickenpox, and diarrheal illness by number only. Use a tally mark (T) for each case. If you diagnose (or strongly believe) a patient has one of these diseases, be sure to report it under this category.

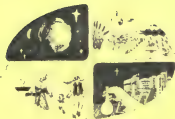
Then, at the end of the reporting week (which goes from Tuesday to Monday), you will receive a phone call from the Health Department requesting your report.

A complete list of reportable diseases is attached. Please make the list easily available in your office. A shorter, "Missoula-specific" list is printed on each green reporting form.

The diseases you report to the Health Department are investigated if they pose a danger to the public's health; they are carefully analyzed to see if trends are developing, and they are reported to the State Health Department and included in total Montana information.

Bill DeCou
Communicable Disease Coordinator
12/80

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700



MISSOULA CITY-COUNTY HEALTH DEPARTMENT

Communicable Disease Case StudyDiagnosis _____ By _____ Suspect ☐ Confirmed ☐

Investigator #1 _____ Date _____

Investigator #2 _____ Date _____

Index Case

Name _____ Age _____ Sex _____

Address _____ Length Residence _____

Phone Number _____ Date Onset _____

Case History _____

Treatment _____

Employment _____ Job Description _____

Employer/School _____ Phone Number _____

Length Employment _____ Supervisor _____

EPIDEMIOLOGICAL NOTES

Water Supply _____ Date Well Last Tested _____

Milk Supply _____ Sewage System _____

Restaurants Usually Frequented _____

Other Suspected Sources Illness _____

Intimate Contacts (Family and Others)

| Relationship | Name | Age | Sex | Comments |
|--------------|-------|-------|-------|----------|
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |

Date Completed

CONTAGIOUS COMMUNIQUÉ

CONTAGIOUS COMMUNIQUÉ

TO: CD Clerk - within 1 hour!

TO: CD Clerk - within 1 hour!

FROM: _____ Date: _____

FROM: _____ Date: _____

RE: _____ disease

RE: _____ disease

referral source _____

referral source _____

pt. name _____

pt. name _____

address/phone _____

address/phone _____

sex: M F age _____ mother/fa _____

sex: M F age _____ mother/fa _____

physician: _____

physician: _____

(school _____ grade _____)

(school _____ grade _____)

OTHER INFORMATION:

OTHER INFORMATION:

8/80 j

8/80 j

CONTAGIOUS COMMUNIQUÉ

CONTAGIOUS COMMUNIQUÉ

TO: CD Clerk - within 1 hour!

TO: CD Clerk - within 1 hour!

FROM: _____ Date: _____

FROM: _____ Date: _____

RE: _____ disease

RE: _____ disease

referral source _____

referral source _____

pt. name _____

pt. name _____

address/phone _____

address/phone _____

sex: M F age _____ mother/fa _____

sex: M F age _____ mother/fa _____

physician: _____

physician: _____

(school _____ grade _____)

(school _____ grade _____)

OTHER INFORMATION:

OTHER INFORMATION:



COMMUNICABLE DISEASE LOG

[illegible]

—

—

COMMUNICABLE DISEASE MAIL REPORT

Dr. Name/Dr. Contact Name/Phone 6-23 6-30 7-7 7-14 7-21 7-28 8-4 8-11 8-18 8-25 9-1 9-8 9-15 9-22 9-29 10-6 10-13 10-20 10-27 11-3 11-10 11-17 11-24 12-1 12-8 12-15

SECTION 2

FIVE COMMUNICABLE DISEASE PROTOCOLS - TO INSURE PROGRAM ACCURACY AND CONSISTENCY

Results - Before these six protocols — Measles, TB, Hepatitis A, Giardiasis, Salmonella, plus Gonorrhea (See Sexually Transmitted Disease Users' Guide) — were developed, the Missoula Health Department had only a very general clinic protocol for venereal diseases. The six new protocols were written and carefully tested. After corrections were made, the protocols were finalized and placed in central locations for easy reference. After six months' use, they were updated. The protocols are used for reference and staff training.

Discussion - Protocols are one clear way of insuring program quality and consistency. They are also an excellent staff training tool. Each of the six protocols were designed to be applicable to any local health department, but may need changes to fit your program's policies.

Methodology - So that you get the most use from them, protocols should be thoroughly tested before they are finalized. They should then be updated at least yearly and kept current by adding addenda or corrections promptly.

Protocols

1. Measles (pages 2.2 to 2.10a)
2. Tuberculosis (pages 2.8b to 2.15)
3. Hepatitis A (pages 2.16 to 2.21)
4. Salmonella (pages 2.22 to 2.26)
5. Giardia (pages 2.27 to 2.30)
6. Gonorrhea Protocol — see Sexually Transmitted Disease Program Evaluation.

MEASLES

OTHER NAMES: Rubeola, red measles, seven or ten-day measles, morbilli,
hard measles, Spanish--sarampion.

RESPONSE:

- I. Outpatient Care Center--give measles immunizations to children beginning at age 15 months (unless in an outbreak when eligible age for vaccine may be reduced to 6 months; those children do require re-vaccination at 15 months to assure continued protection).
- A. Vaccination Procedure (Measles vaccine contra-indicated for pregnant women; women should avoid pregnancy for three months after measles immunization.)
 1. Explain procedure to parent and child, have Important Information Form signed.
 2. Vaccination--single dose of live measles vaccine in volume specified by manufacturer to be given subcutaneously.
 3. Fill out vaccine card and give to parent.
 4. Keep vaccination card for health department files.
- B. Re-vaccination--children vaccinated before first birthday (particularly if vaccine was administered with ISG or MIG (measles immune globulin) should be re-vaccinated with live measles vaccine after 15 months of age. Despite the risk of a local reaction, children previously given inactivated (killed) measles vaccine should be re-vaccinated with live vaccine. Those vaccinated prior to 1968 should be re-vaccinated unless proof of live vaccine can be documented.

C. Immunization of susceptible primary contacts--Go to III. C. 4.

II. Surveillance (Rash Illness or Suspected Measles Reports)

A. Report of rash illness will go to nursing division Communicable Disease Assistant to be given to Communicable Disease Coordinator within 1/2 hour and assigned for investigation within four hours.

1. Using Montana Rash Illness Investigation Form (from Communicable Disease Assistant) call or visit family and ask questions (purpose of form is to rule out measles).

- a) If measles is ruled out, then make a copy of the front page and give to field epidemiologist.
- b) If measles cannot be ruled out ensure physician has diagnosed case, (to be able to use quarantine and immunization law rules), then consult with Communicable Disease nurse and begin containment process.

III. Containment (if in clinical judgment, measles cannot be ruled out).

A. Phone Measles Case Report to Preventive Health Services Bureau (449-4740) OR notify field epidemiologist within four working hours of confirmation.

B. Begin investigation within four working hours of confirmation.

C. Investigation--locate additional cases to define extent of outbreak.

1. Search for cases.

- a) Ask the first cases of measles about his/her activities 12-16 days before the onset of rash. This may well turn up the person who was the true first case. You may be able to go back several generations this way. Finding other cases may help confirm the original diagnosis.
- b) Complete investigation for each case of measles.
- c) Keep a line list of all known cases and suspects in one central spot (Outpatient Care Center).

- d) Once you know how big the outbreak is, assess your resources. If there are only a few cases, it should be feasible to follow the rest of this protocol. You may decide to ask for help to get the job done or for advice on how to proceed. Or you may decide to mount a larger scale immunization campaign if there are too many cases to investigate individually.
 - e) A Measles Quarantine Rule was adopted on June 15, 1979 and should be considered at this time. See Administrative Rules of Montana 16.28.618. (See Appendix)
2. Identify susceptible contacts.
- a) For each known case, find out who was exposed beginning four days before the rash appeared and going up to four days after the rash appeared. Include children in the doctor's waiting room if the case saw a doctor. These are the primary contacts. List them on the back of the case investigation form (see page 2.9a). They are at highest risk of getting measles, and by the time of investigation may already be incubating measles.
 - b) For each primary contact, find out if he/she already has measles, is known to be immune, or is susceptible. Add those with measles to the case list. Have parents of primary contacts call if measles develops.
 - c) Call parents of susceptible primary contacts after their incubation period to detect secondary cases.
 - d) For susceptible primary contacts, find out who their contacts are. These are secondary contacts and are at risk for measles because the primary contacts may already be infectious at the time of investigation.

3. Keep active cases home to limit spread, for no less than five days after onset of rash. People who are not immune to measles should be kept from contact with the active case. Susceptible contacts may be quarantined. See ARM 16.28.618(3)b.--Appendix.
4. Immunize the susceptibles.
 - a) All susceptible primary contacts should be immunized with live vaccine except:
 - 1) Those aged less than six months, who should have antibody from their mothers and need no immunization.
 - 2) Those with medical contra-indications to measles vaccine, who should get gamma globulin (0.11 ml/lb).
 - 3) Susceptible household contacts aged 6 to 15 months are too old to have antibody from their mothers, but too young to be effectively immunized with live vaccine. They should get gamma globulin (0.11 ml/lb).
 - b) Children below age 15 months who get either gamma globulin or live vaccine should be carefully followed to make sure that they are immunized again with live vaccine at age 15 months (and at least three months after the last gamma globulin injection).
 - c) It may be necessary to involve groups of community volunteers to make sure signed consent forms or documentation of immunity are obtained for all primary contacts. It is rarely enough to just send consent forms home with children, too many who need immunizations do not bring them back and too much vaccine is given to those who do not need it.
 - d) Immunize susceptible secondary contacts. Here priorities have to be set: how likely is the primary contact to get

measles? (Vaccine may be protective to the primary contact if given within 48 hours of his/her initial exposure.)

What will happen if the secondary contact gets measles--

does he/she go to a school where there is no measles?

Will he/she be going to a big gathering? and so on.

e) Consider going into homes to immunize contacts, especially pre-school children.

5. Keep up surveillance. Do not consider the outbreak over until at least three weeks have gone by with no new cases. Keep looking for cases and unlocated contacts.

DESCRIPTION:

Agent is measles virus, an RNA virus.

Disease is acute and highly communicable. Symptoms are three to four days of fever (100° - 104°), cough, coryza and conjunctivitis; symptoms peak as rash appears. Koplik spots are seen in 80% of cases in the pre-eruptive stage on the buccal mucosa (check inner lips or opposite the lower molars). Koplik spots are small bright red irregular lesions. In daylight there is a minute bluish-white speck in the center. As the disease progresses the spots spread and become more prominent but fade within two days of onset of rash. Stimson's sign: shortly after onset of fever the lower eyelids become puffy and a transverse line of inflammation develops on the conjunctiva of these lids. Photophobia may be present. The rash is dusky and reddish-brown appearing three to seven days after onset of prodrome. Starting at the hairline or on the face and progressing downward, it is generalized by the third day. Rash fades from four to six days after onset, ending in branny desquamation. Fever is present at least two days after onset of rash.

Atypical measles occurs upon measles exposure in some persons who received the killed measles vaccine or the killed-live measles vaccine combinations in 1963-67. Atypical measles usually begins with 2-3 days of fever, headache and cough followed by a maculopapular rash which starts on the wrists and ankles and spreads centrally as well as to the palms and soles and which may become vesicular or petechial, peripheral edema, abdominal pain, chest x-ray evidence of pneumonitis, hilar adenopathy, or pleural effusion, and a marked measles antibody titer rise.

The most common complications are bronchopneumonia, severe bronchitis, myocarditis, and otitis media. Rare complications can include encephalitis, thrombocytopenia, exacerbation of tuberculosis infection, and subacute sclerosing panencephalitis (SSPE) and death.

RESERVOIR:

Transmission by droplet spread of direct contact with secretions of nose, throat or urine of infected person; less commonly airborne or articles freshly contaminated by secretions of nose and throat.

INCUBATION AND COMMUNICABILITY:

The average incubation period is ten days and can vary from 8 to 13 days from exposure to initial fever. Typically, the rash appears two weeks after exposure. In adults, incubation is often longer. Late inoculation with measles immune serum globulin (gamma globulin) may extend incubation period to 21 days.

Communicable from beginning of prodromal period to four days after appearance of rash.

DIAGNOSIS:

Made principally from symptomatology and acute and convalescent (two weeks after acute) antibody titers. Virus may be isolated from blood, conjunctiva and nasopharynx. Leukopenia is prominent after onset of rash. Koplik spots are pathognomonic.

DIFFERENTIAL DIAGNOSIS:

Rubella, Scarlet fever, Roseola, secondary syphilis, exanthem due to coxsackie or Echo viruses, Rocky Mountain spotted fever.

CONTROL:

Prevention is by vaccination with live attenuated measles strains and by prompt investigation and surveillance.

MONTANA RASH ILLNESS INVESTIGATION FORM

| | |
|--|--|
| PATIENT'S NAME _____ PARENT'S (Guardian's) NAME (If not Adult) _____ BIRTH DATE _____ SEX _____ RACE _____ ADDRESS _____ PARENT'S PHONE _____ COUNTY _____ CITY _____ STATE _____ ZIP CODE _____ | Name of Investigator _____ Health Dept. _____ Date Investigation Initiated _____ VACCINE DATA 1) Measles (Rubeola) Yes <input type="checkbox"/> No <input type="checkbox"/> Age when Immunized _____ Type of Vaccine: Live <input type="checkbox"/> Killed <input type="checkbox"/> Unk <input type="checkbox"/> 2) Rubella: YES <input type="checkbox"/> NO <input type="checkbox"/> Age when Immunized _____ _____ Family Physician _____ Address _____ Phone _____ |
| RASH ONSET DATE _____ HOSPITALIZED? YES <input type="checkbox"/> NO <input type="checkbox"/> HOSPITAL _____ ADDRESS _____ CITY _____ STATE _____ REPORTED BY _____ DATE OF REPORT _____ ADDRESS OF REPORTING SOURCE _____ DISEASE SUSPECTED _____ | |

| FEVER HISTORY 1) Fever Onset _____ Month Day Year 2) Fever (Highest Recorded) _____ ° Date _____ 3) Fever Duration _____ Days 4) Fever at Rash Onset _____ ° RASH HISTORY 1) Rash Onset _____ Month Day Year 2) Rash Duration _____ Days 3) 1st location of rash _____ 4) Spread of Rash _____ 5) Drugs before Rash (Specify) YES <input type="checkbox"/> NO <input type="checkbox"/> | SYMPTOMS: <table style="width: 100%;"> <tr> <th></th> <th>YES</th> <th>NO</th> <th>UNK</th> <th></th> <th>YES</th> <th>NO</th> <th>UNK</th> </tr> <tr> <td>1) Koplik Spots</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>12) Loss of appetite</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Date seen: _____</td> <td></td> <td></td> <td></td> <td>13) Sore throat</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>By Whom: _____</td> <td></td> <td></td> <td></td> <td>14) Swollen lymph gland</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>2) Strawberry Tongue</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>if yes, where</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3) Cough</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>15) Circumoral pallor</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4) Runny Nose</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>(Paleness around mouth)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5) Fever after rash onset</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>16) Desquamation (Skin shedding)</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>6) Watery or red eyes</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>Describe _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7) Hoarseness</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>8) Vomiting</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>9) Patient very sick?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>10) Malaise</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>11) Photophobia</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | YES | NO | UNK | | YES | NO | UNK | 1) Koplik Spots | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12) Loss of appetite | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Date seen: _____ | | | | 13) Sore throat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | By Whom: _____ | | | | 14) Swollen lymph gland | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2) Strawberry Tongue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | if yes, where | | | | 3) Cough | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 15) Circumoral pallor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4) Runny Nose | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (Paleness around mouth) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5) Fever after rash onset | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 16) Desquamation (Skin shedding) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6) Watery or red eyes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Describe _____ | | | | 7) Hoarseness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | 8) Vomiting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | 9) Patient very sick? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | 10) Malaise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | 11) Photophobia | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | |
|--|---|--------------------------|--------------------------|----------------------------------|--------------------------|--------------------------|--------------------------|----|-----|-----------------|--------------------------|--------------------------|--------------------------|----------------------|--------------------------|--------------------------|--------------------------|------------------|--|--|--|-----------------|--------------------------|--------------------------|--------------------------|----------------|--|--|--|-------------------------|--------------------------|--------------------------|--------------------------|----------------------|--------------------------|--------------------------|--------------------------|---------------|--|--|--|----------|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|---------------|--------------------------|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------|----------------------------------|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|----------------|--|--|--|---------------|--------------------------|--------------------------|--------------------------|--|--|--|--|-------------|--------------------------|--------------------------|--------------------------|--|--|--|--|-----------------------|--------------------------|--------------------------|--------------------------|--|--|--|--|-------------|--------------------------|--------------------------|--------------------------|--|--|--|--|-----------------|--------------------------|--------------------------|--------------------------|--|--|--|--|
| | YES | NO | UNK | | YES | NO | UNK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1) Koplik Spots | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 12) Loss of appetite | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date seen: _____ | | | | 13) Sore throat | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| By Whom: _____ | | | | 14) Swollen lymph gland | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2) Strawberry Tongue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | if yes, where | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3) Cough | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 15) Circumoral pallor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Runny Nose | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | (Paleness around mouth) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5) Fever after rash onset | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 16) Desquamation (Skin shedding) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6) Watery or red eyes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Describe _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7) Hoarseness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8) Vomiting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9) Patient very sick? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10) Malaise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11) Photophobia | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RASH DESCRIPTION <input type="checkbox"/> Reddish <input type="checkbox"/> Some discrete lesions & some areas blotchy & confluent <input type="checkbox"/> Dusky Brown <input type="checkbox"/> Marked Itching <input type="checkbox"/> Watery Vesicles <input type="checkbox"/> Distinct & Evenly Distributed <input type="checkbox"/> OTHER (Specify) _____ | PATIENT EXAMINED BY: PRIVATE DOCTOR <input type="checkbox"/> DATE _____ PUBLIC HEALTH DOCTOR <input type="checkbox"/> DATE _____ PHN or RN <input type="checkbox"/> DATE _____ SCHOOL NURSE <input type="checkbox"/> DATE _____ IMMUNIZATION PROGRAM STAFF <input type="checkbox"/> DATE _____ OTHER (Specify) _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| LABORATORY DATA Acute Blood: Date _____ Result _____ Convalescent Blood: Date _____ Result _____ Throat Culture: Date _____ Result _____ | COMMENTS: _____ _____ _____ |
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|---|---|--|---|
| PATIENT CONTACT DATA 1) Where was patient 14 days prior to onset of rash? _____ _____ 2) Where has patient been between 1 week prior to onset of rash and 5 days after rash onset? <table style="width: 100%;"> <tr> <td style="width: 50%;"> Church <input type="checkbox"/> Date _____ Group Meetings <input type="checkbox"/> Date _____ Babysitter <input type="checkbox"/> Date _____ Family Gathering <input type="checkbox"/> Date _____ </td> <td style="width: 50%;"> School/Daycare (Specify) <input type="checkbox"/> Date _____ Other (Specify) _____ <input type="checkbox"/> Date _____ </td> </tr> </table> | | Church <input type="checkbox"/> Date _____ Group Meetings <input type="checkbox"/> Date _____ Babysitter <input type="checkbox"/> Date _____ Family Gathering <input type="checkbox"/> Date _____ | School/Daycare (Specify) <input type="checkbox"/> Date _____ Other (Specify) _____ <input type="checkbox"/> Date _____ |
| Church <input type="checkbox"/> Date _____ Group Meetings <input type="checkbox"/> Date _____ Babysitter <input type="checkbox"/> Date _____ Family Gathering <input type="checkbox"/> Date _____ | School/Daycare (Specify) <input type="checkbox"/> Date _____ Other (Specify) _____ <input type="checkbox"/> Date _____ | | |

NOTE: Make a copy of this side immediately and forward to Preventive Health Services Bureau, SDHES, Helena, MT 59601. ALSO, Call reports of suspected measles immediately to 1-800-332-2288 (Toll-free), or 449-2645 (Helena).

**MONTANA
RASH ILLNESS INVESTIGATION FORM**

| | |
|--|--|
| PATIENT'S NAME _____ PARENT'S (Guardian's) NAME (if not Adult) _____ BIRTH DATE _____ SEX _____ RACE _____ ADDRESS _____ PARENT'S PHONE _____ COUNTY _____ CITY _____ STATE _____ ZIP CODE _____ | Name of Investigator _____ Health Dept. _____ Date Investigation Initiated _____ VACCINE DATA 1) Measles (Rubeola) Yes <input type="checkbox"/> No <input type="checkbox"/> Age when immunized _____ Type of Vaccine: Live <input type="checkbox"/> Killed <input type="checkbox"/> Unk <input type="checkbox"/> 2) Rubella: YES <input type="checkbox"/> NO <input type="checkbox"/> Age when immunized _____ _____ Family Physician _____ Address _____ Phone _____ |
| RASH ONSET DATE _____ HOSPITALIZED? YES <input type="checkbox"/> NO <input type="checkbox"/> HOSPITAL _____ ADDRESS _____ CITY _____ STATE _____ REPORTED BY _____ DATE OF REPORT _____ ADDRESS OF REPORTING SOURCE _____ DISEASE SUSPECTED _____ | |

| FEVER HISTORY 1) Fever Onset _____ Month Day Year 2) Fever (Highest Recorded) _____ ° Date _____ 3) Fever Duration _____ Days 4) Fever at Rash Onset _____ ° RASH HISTORY 1) Rash Onset _____ Month Day Year 2) Rash Duration _____ Days 3) 1st location of rash _____ 4) Spread of Rash _____ 5) Drugs before Rash (Specify) YES <input type="checkbox"/> NO <input type="checkbox"/> | SYMPTOMS: <table style="width: 100%;"> <tr> <th></th> <th>YES</th> <th>NO</th> <th>UNK</th> </tr> <tr> <td>1) Koplik Spots</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Date seen: _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>By Whom: _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2) Strawberry Tongue</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>3) Cough</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>4) Runny Nose</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>5) Fever after rash onset</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>6) Watery or red eyes</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>7) Hoarse</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>8) Vomiting</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>9) Patient very sick?</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>10) Malaise</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>11) Photophobia</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> 12) Loss of appetite <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK <input type="checkbox"/> 13) Sore throat <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK <input type="checkbox"/> 14) Swollen lymph gland <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK <input type="checkbox"/> if yes, where _____ 15) Circumoral pallor (Paleness around mouth) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK <input type="checkbox"/> 16) Desquamation (Skin shedding) <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNK <input type="checkbox"/> Describe _____ _____ | | YES | NO | UNK | 1) Koplik Spots | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Date seen: _____ | | | | By Whom: _____ | | | | 2) Strawberry Tongue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 3) Cough | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 4) Runny Nose | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 5) Fever after rash onset | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 6) Watery or red eyes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 7) Hoarse | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 8) Vomiting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 9) Patient very sick? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 10) Malaise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 11) Photophobia | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--|---|--------------------------------------|----|---|--|--|--|---|------------------|--|--|--|----------------|--|--|--|----------------------|--------------------------|--------------------------|--------------------------|----------|--------------------------|--------------------------|--------------------------|---------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|-----------|--------------------------|--------------------------|--------------------------|-------------|--------------------------|--------------------------|--------------------------|-----------------------|--------------------------|--------------------------|--------------------------|-------------|--------------------------|--------------------------|--------------------------|-----------------|--------------------------|--------------------------|--------------------------|
| | YES | NO | UNK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1) Koplik Spots | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Date seen: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| By Whom: _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2) Strawberry Tongue | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3) Cough | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Runny Nose | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5) Fever after rash onset | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6) Watery or red eyes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7) Hoarse | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8) Vomiting | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9) Patient very sick? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10) Malaise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11) Photophobia | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RASH DESCRIPTION <table style="width: 100%;"> <tr> <td><input type="checkbox"/> Reddish</td> <td><input type="checkbox"/> Some discrete lesions & some areas blotchy & confluent</td> </tr> <tr> <td><input type="checkbox"/> Dusky Brown</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Marked Itching</td> <td><input type="checkbox"/> Watery Vesicles</td> </tr> <tr> <td><input type="checkbox"/> Distinct & Evenly Distributed</td> <td><input type="checkbox"/> OTHER (Specify) _____</td> </tr> </table> | <input type="checkbox"/> Reddish | <input type="checkbox"/> Some discrete lesions & some areas blotchy & confluent | <input type="checkbox"/> Dusky Brown | | <input type="checkbox"/> Marked Itching | <input type="checkbox"/> Watery Vesicles | <input type="checkbox"/> Distinct & Evenly Distributed | <input type="checkbox"/> OTHER (Specify) _____ | PATIENT EXAMINED BY: PRIVATE DOCTOR <input type="checkbox"/> DATE _____ PUBLIC HEALTH DOCTOR <input type="checkbox"/> DATE _____ PHN or RN <input type="checkbox"/> DATE _____ SCHOOL NURSE <input type="checkbox"/> DATE _____ IMMUNIZATION PROGRAM STAFF <input type="checkbox"/> DATE _____ OTHER (Specify) <input type="checkbox"/> DATE _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Reddish | <input type="checkbox"/> Some discrete lesions & some areas blotchy & confluent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Dusky Brown | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Marked Itching | <input type="checkbox"/> Watery Vesicles | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> Distinct & Evenly Distributed | <input type="checkbox"/> OTHER (Specify) _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| LABORATORY DATA Acute Blood: Date _____ Result _____ Convalescent Blood: Date _____ Result _____ Throat Culture: Date _____ Result _____ | COMMENTS: _____ _____ _____ |
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|---|------------|---|------------|---|------------|---|------------|-----------------------|------------|-------------------------------------|------------|--|--|---|------------|--|--|
| PATIENT CONTACT DATA 1) Where was patient 14 days prior to onset of rash? _____ _____ 2) Where has patient been between 1 week prior to onset of rash and 5 days after rash onset? <table style="width: 100%;"> <tr> <td>Church <input type="checkbox"/></td> <td>Date _____</td> <td>School/Daycare (Specify) <input type="checkbox"/></td> <td>Date _____</td> </tr> <tr> <td>Group Meetings <input type="checkbox"/></td> <td>Date _____</td> <td>Other (Specify) _____</td> <td>Date _____</td> </tr> <tr> <td>Babysitter <input type="checkbox"/></td> <td>Date _____</td> <td></td> <td></td> </tr> <tr> <td>Family Gathering <input type="checkbox"/></td> <td>Date _____</td> <td></td> <td></td> </tr> </table> | | Church <input type="checkbox"/> | Date _____ | School/Daycare (Specify) <input type="checkbox"/> | Date _____ | Group Meetings <input type="checkbox"/> | Date _____ | Other (Specify) _____ | Date _____ | Babysitter <input type="checkbox"/> | Date _____ | | | Family Gathering <input type="checkbox"/> | Date _____ | | |
| Church <input type="checkbox"/> | Date _____ | School/Daycare (Specify) <input type="checkbox"/> | Date _____ | | | | | | | | | | | | | | |
| Group Meetings <input type="checkbox"/> | Date _____ | Other (Specify) _____ | Date _____ | | | | | | | | | | | | | | |
| Babysitter <input type="checkbox"/> | Date _____ | | | | | | | | | | | | | | | | |
| Family Gathering <input type="checkbox"/> | Date _____ | | | | | | | | | | | | | | | | |

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APPENDIX

16.28.618 MEASLES--RUBEOLA (1) The provisions of this rule apply to measles, exclusive of quarantine measures contained in other rules for control of communicable disease.

(2) Unless otherwise specified, for the purposes of this rule the following definitions apply:

(a) "Immunity" means immunity to measles, as demonstrated by:

(i) a school health record showing approved measles vaccine was administered:

(A) either in 1968 or later, or between 1966 and 1968 if the vaccine was a documented live vaccine; and

(B) after the first birthday, documented by the month, day and year of administration of the vaccine, except that only the month and year are necessary if the person was enrolled in any Montana school prior to August 1, 1980, or is a transferee into a Montana school from out-of-state.

(ii) a signed statement from a physician or his designee that the person has had measles disease, indicating the month, day and year of diagnosis, except that only the month and year are necessary if the person was enrolled in any Montana school prior to August 1, 1980, or is a transferee into a Montana school from out-of-state.

(b) "Measles case" means a person suffering from measles, from 5 days before the onset of rash to 5 days after the onset of rash.

(c) "Susceptible contact" means any person not able to demonstrate immunity who is less than 21 years of age and who has been exposed face-to-face to a measles case, or attends the same school as a case or rides the same school bus as a case.

(3) A local health officer or the department may impose isolation or quarantine based on the diagnosis of measles in one or more persons as confirmed by a physician. If isolation or quarantine is imposed, the local health officer shall post public notice of the effective date of the isolation or quarantine and make immunizations available, free of charge to extent of his resources, upon request.

(a) A measles case must be isolated to his residence for no less than 5 days following the onset of rash. The movements of other household contacts in or out of the residence are not restricted unless they are susceptible contacts. The local health officer shall advise the household contacts where the measles case is isolated to warn a person who is not immune against measles against entering the residence.

(b) A susceptible contact must be quarantined in his residence for no less than 14 calendar days after his last exposure to measles, whether face to face with a measles case or by attendance at school or school-sponsored activities. The movements of any other person in or out of the residence is not restricted.

(c) A susceptible contact may be released from quarantine to receive immunization against measles, and may return to school and school-sponsored activities after having received measles immunization from a physician or local health officer and having submitted written documentation of such immunization to the school in accordance with the provisions of sub-chapter 7 of this chapter.

(4) If a school with a measles case allows a susceptible contact who receives immunization to attend classes, no student of that school may participate in an interscholastic event for 14 calendar days following the date of immunization of the susceptible-contact student. (History: Sec. 50-1-202, 50-2-118 MCA; IMP, Sec. 50-1-202, 50-2-118 MCA; NEW, 1980 MAR p. 1579, Eff. 6/13/80.)



TUBERCULOSIS

OTHER NAMES: Consumption, white plague, TB.

CASE DEFINITION:

A tuberculosis case is defined as either a physician diagnosis or a positive laboratory isolate of mycobacterium tuberculosis.

RESPONSE:

- I. Cases reported to the Health Department - find all household or close contacts (i.e., families, students if teacher, bartender, etc., or anyone who shared the environmental air with a source case for a relatively longer time than other known contacts). If out-of-area, notify the State Health Department to locate.
 - A. Give each intimate contact a Mantoux (PPD) skin test (see III,B) within 48 hours of location.
 - B. Arrange to read test within 48-72 hours (go to home to give or read PPD test if necessary).
 1. If negative, repeat test in three months to insure a second negative result.
 2. If positive, send to private doctor for chest x-ray within one week. (The Health Department is able to help patients pay for x-rays if they are unable.) Follow-up within one week.
 - a. If x-ray is negative, there is no need to repeat.
 - b. If x-ray is positive, the patient must be examined by a physician with sputum culture follow-up to rule out possible active TB before determining whether chemoprophylaxis is appropriate. Some physicians treat on positive x-ray.
- II. Surveillance
 - A. Identification of Infected Persons - TB-infected persons are most likely to be found in the following situations where risk of disease is greatest.
 1. Household contacts, both tuberculin negative and tuberculin positive (especially children). *The risk during the first year after discovering the index case is about 1 in 30.*
 2. Recent converters of any age.

3. Old inactive cases which were not treated with chemotherapy.
 4. Positive reactors with abnormal pulmonary findings on chest x-ray.
 5. Positive reactors under the age of 20 years.
 6. Special clinical situations, e.g., gastrectomy patients, patients on immunosuppressive therapy, alcoholics.
- B. Determination of Infection - The nebulized sputum or chest x-ray is the best diagnostic test for determining infection of at-risk persons.
- C. Following Active Cases
1. Getting active cases under treatment usually involves hospitalization to administer 3-drug therapy and observation of patients' response to anti-TB drugs. Patient then may be released to continue drug therapy (in difficult cases, it may be necessary to follow-up several times per month with visits to the patient). Drugs are usually given two or three at a time to prevent tubercle from becoming drug-resistant. The most commonly used drugs include myambutol (ethambutol) rifampin, streptomycin, and isoniazid (INH). Patient must be carefully monitored for symptoms of drug reaction and liver function problems.
 2. Upon completion of medication, a chest x-ray or nebulized sputum is a proof-of-cure.
 3. Test all contacts using Mantoux test. Positive reactors to the above test who are at high risk (alcoholics, diabetics, teenagers and young children) are usually put on INH chemoprophylaxis for one year. (INH inhibits growth of the encapsulated tubercle and thus prevents the patient from getting active TB.) The success of the INH largely depends on the patients' understanding and compliance and subsequently on the public health worker who explains the therapy and follows the patient.
 4. The Health Department can help with x-ray, INH, and nebulized sputum collection expenses if necessary.
 5. Converters (person who goes from negative to positive) are at high risk of "breaking down," or becoming active. Make sure the patient receives a chest x-ray or physical at least once per year.
- III. Outpatient Clinic
- TB testing is necessary for teachers, day care workers, foster care

personnel, nursing home personnel, health department nursing personnel and known or suspected contacts of an active TB case.

A. Monovac (tine) test is used for routine testing (teachers, etc.).

Equipment needed: TB card, alcohol swab, monovac (or tine) test.

1. Ask patient if he/she has ever reacted positively to a TB test.
 - a. If no, conduct test.
 - b. If yes, refer patient for chest x-ray.
2. Ask patient if he/she is a TB suspect or contact and if yes, administer PPD (or Mantoux) test, NOT Monovac.
3. Fill out TB card. (Negative TB cards are filed for at least two years; positive reactors and converters' cards are kept on file permanently.)
4. Swab (1) volar forearm with alcohol. Let area dry.
5. Apply test for at least 5 seconds (count 1-1,000, 2-1,000, 3-1,000) follow procedure on test leaflet.
6. Schedule patient to return in 3 or 4 days to read test; record results.
7. If test is positive, repeat on (r) volar forearm with PPD test (III,B).

B. Mantoux (PPD test) is used for known, or suspected (household) TB contacts.

Equipment needed: TB card, tuberculin syringe with 5/8" 25 gm needle, 1 cc of tuberculin, alcohol swab.

1. If patient is a known positive reactor, refer for chest x-ray.
2. Draw .1 cc tuberculin into TB syringe.
3. Swab (1) volar forearm with alcohol. Let area dry.
4. Insert .1cc tuberculin interdermally to form a wheal. (If wheal is not formed, repeat test at another site.)
5. Schedule patient to return in 2 or 3 days so that test may be read and recorded.
 - a. If test is positive, refer patient for chest x-ray immediately. Follow-up. Financial help is available from the Health Department for patients who cannot afford to pay for x-ray.
 - b. If test is negative, advise patient to have another test in three months to allow for potential conversion factor. (TB is a slow-growing organism and conversion from negative to positive reactor is a slow process.)

NOTE: Chemoprophylaxis - use of isoniazid or INH for 12 months to prevent development of active TB in high risk situations. Dosage - Adults

Montana State Department of Health
Coveall Building
Helena, Montana 59601

Information Requested From: _____ County _____

Patient _____ Birthdate: _____ Address: _____

Diagnosis _____ Bacteriology _____ Physician _____

HOUSEHOLD CONTACTS

| 1. Name 2. Relationship to Patient 3. Medical Supervision | Age | Date Contact Broken | Initial Skin Test & Result | | X-Ray Date and Report | Chemoprophylaxis | | Remarks |
|---|-----|---------------------------|-------------------------------|------|--------------------------|------------------|---------------------|---------|
| | | | Date | Type | | Drug & Date | Time to Continue | |
| 1. _____ | | | | | | | | |
| 2. _____ | | | | | | | | |
| 3. _____ | | | | | | | | |
| 1. _____ | | | | | | | | |
| 2. _____ | | | | | | | | |
| 3. _____ | | | | | | | | |
| 1. _____ | | | | | | | | |
| 2. _____ | | | | | | | | |
| 3. _____ | | | | | | | | |
| 1. _____ | | | | | | | | |
| 2. _____ | | | | | | | | |
| 3. _____ | | | | | | | | |

NON-HOUSEHOLD CONTACTS

A8e

**Casual
or
Close**

Skin Test

| X-Ray | Date and Report |
|-------|-----------------|
| | |

| Chemoprophylaxis | |
|------------------|----------|
| Drug & | Time to |
| Date: | Continue |

Results

11 relationships above are stated to the patient. I.e., wife, son, brother, work partner, friend, etc.

071: Non-household contacts are those persons who have been with the patient for frequent and prolonged periods of time and reside in another residence. Examples would be:

1. Grandparents, aunts, uncles, other relatives, baby-sitters and frequent visitors in the home.
2. Frequent prolonged social contacts in close proximity such as card-playing partners.
3. Occupational excursions in close quarters for an extended period of time. I.e., shared office space, working at the same machine inside, and so forth.

TUBERCULOSIS SKIN TESTING SURVEY

FACILITY WHERE TESTING DONE: _____

(Record details for each test; list each on a separate line below)

| DATE TEST DONE | SPECIFY TYPE: Tine (T), PPD (P), Other (Specify) | REASON FOR TESTING: Routine (A), Teacher (B), Daycare Emp. (C), Health Care Emp. (D), Other (Specify) | AGE | SEX |
|----------------|--|---|-----|-----|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |
| 7. | | | | |
| 8. | | | | |
| 9. | | | | |
| 10. | | | | |
| 11. | | | | |
| 12. | | | | |
| 13. | | | | |
| 14. | | | | |
| 15. | | | | |
| 16. | | | | |
| 17. | | | | |
| 18. | | | | |
| 19. | | | | |
| 20. | | | | |

POSITIVE REACTORS

| Name | Age | Sex | Retested with PPD | Mil. | Chest X-Ray | | On Chemotherapy? |
|------|-----|-----|-------------------|------|-------------|----------|------------------|
| | | | | | Normal | Abnormal | |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |

Reported By: _____ Phone Number: _____

TUBERCULOSIS INFORMATION EXCHANGE

TO: _____ DATE: _____

FROM: _____

PATIENT: _____ TYPE: ☐ Pulmonary ☐ Other _____
(Specify)

ADDRESS: _____ DATE DIAGNOSED: _____

DATE OF BIRTH: _____ AGE: _____ DIAGNOSING PHYSICIAN: _____

SEX _____ RACE _____ CONTACT OF: _____

KNOWN CASE (name): _____

DATE OF LAST LAB TEST: _____

LAB WHERE TEST WAS DONE: _____

☐ Sputum ☐ Other _____
(Specify)

Smear:

☐ Positive

☐ Negative

☐ Results Unknown

Culture:

☐ Positive

☐ Negative

☐ Results Unknown

DATE OF LAST X-RAY: _____

☐ Normal

☐ Abnormal

☐ Improving

☐ Worsening

Comments: _____

CHEMOTHERAPY STARTED

DATE

| | |
|--|--|
| | |
| | |
| | |
| | |

Isoniazid (INH)
Rifampin
Myambutol (EMB)
Streptomycin
Other

DOSE

REFILLS

DATE

| | |
|--|--|
| | |
| | |
| | |
| | |

Isoniazid (INH)
Rifampin
Myambutol (EMB)
Streptomycin
Other

DOSE

Has there been any break in this patient's chemotherapy?
If yes, why? _____

☐ YES ☐ NO

DATE CHEMOTHERAPY STOPPED: _____

☐ Completed Therapy

☐ Moved from area to _____

☐ Lost - unable to locate

☐ Died (date) _____

☐ Non-Compliance

☐ Adverse Reaction

DATE OF LAST MEDICAL EXAM: _____

General Health:

☐ Good

☐ Fair

☐ Poor

☐ Improving

☐ Worsening

☐ No Change

☐ Weight Gain _____ lbs. ☐ Weight Loss _____ lbs.

DATE OF LAST MEDICAL REVIEW (No exam): _____

COMMENTS: _____

Signed By: _____ Phone Number: _____

INITIAL TUBERCULOSIS REPORT

FOR NEW OR REACTIVATED CASE OF DISEASE

NAME: _____ BIRTHDATE: _____

ADDRESS: _____ DIAGNOSIS DATE: _____

CITY: _____ COUNTY: _____ STATE: _____

SEX: ☐ female ☐ male RACE: ☐ White ☐ American Indian ☐ Other (specify) _____**CURRENT CHARACTERISTICS:**

- 1.
- TUBERCULOSIS DISEASE:**
- ☐
- Yes
- ☐
- No
- ☐
- Reported at time of death

If yes, check predominant site listed below:

- ☐ Pulmonary ☐ Bone and/or Joint ☐ Meningeal ☐ Pleural ☐ Genitourinary
- ☐ Peritoneal ☐ Lymphatic ☐ Miliary ☐ Other (specify) _____

Significant site(s) other than predominant site: _____

2. **BACTERIOLOGY:**

| | Date: _____ | Positive | Negative | Pending | Not Done |
|------------|-------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Smear | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Culture | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Not Stated | _____ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

If culture is positive: ☐ MTB or ☐ Other Mycobacterium (specify) _____3. **CHEMOTHERAPY:**☐ Not on chemotherapy; Why? _____☐ On chemotherapy

Date started: _____

☐ Isoniazid (INH)☐ Rifampin☐ Myambutol (EMB)☐ Streptomycin☐ Other (specify) _____4. **PREVIOUS TREATMENT FOR TUBERCULOSIS DISEASE:**☐ Yes (List year) _____☐ No ☐ Unknown

Known contact to tuberculosis disease:

☐ Yes (Name of contact) _____☐ No ☐ Unknown5. **X-RAY:** ☐ Normal ☐ Abnormal ☐ Not Done

Report Comments: _____

☐ Stable ☐ Worsening ☐ ImprovingCavitary: ☐ Minimal ☐ Moderate ☐ Far Advanced6. **TUBERCULIN TEST:** ☐ Positive ☐ Negative ☐ Doubtful ☐ Not done

_____ mm _____ mm _____ mm

Type of test done: _____

Other medical problems under treatment: _____

Reported By: _____ Phone Number: _____ Date: _____

HEPATITIS A

OTHER NAMES: Infectious hepatitis, short-incubation hepatitis, epidemic hepatitis, epidemic jaundice, catarrhal jaundice, viral hepatitis type A.

RESPONSE:

Responsibility for investigation and followup - Nursing and Sanitation Division.

I. Reported Disease—case must be confirmed by a physician

A. Treatment

1. Call should be made to or received from client's physician to confirm case. (If out-of-county clients they must have written physician's order to receive gamma globulin.)
 - a. Ask if an Australian Antigen test has been performed and with what results.
 - (1) If yes, with negative results, give gamma globulin.
 - (2) If no, patient should have the test performed before receiving gamma globulin
 - b. Obtain pertinent data
 - (1) Onset
 - (2) Severity
 - (3) Duration
 - (4) Probable Source
 - (5) Information on how to locate client for further interviews.
2. When case is confirmed then give prophylactic Gamma Globulin (ISG) to patient's intimate contacts if no more than 14 days have elapsed since exposure.
 - a. Intimate contacts are permanent or temporary household residents.
 - b. School contacts are usually not an important means of transmitting disease. However, if epidemiologic study shows that a school- or classroom-centered outbreak exists, administer ISG to people at risk.

- c. Institutional contacts — prisons, institution for the mentally retarded, etc., favor transmission of Hepatitis A. Administer ISG to residents and staff contacts in case of epidemic.
 - d. Hospital contacts — prevention, such as hygienic practices, continuing education projects and routine precautions for personnel who have close contact with hepatitis cases, as indicated.
 - e. Office and factory exposure — routine administration of ISG is not indicated for people exposed in usual work situation to hepatitis case.
 - f. Common source exposure — when food, water or other such vehicle is identified as a common source of infection for multiple hepatitis cases, administering ISG to others exposed to same source has not been proven beneficial.
3. Dose for intimate contacts unless otherwise indicated by written doctor order — administer deep IM.

| <u>Person's Weight</u> | <u>GG Dosage</u> (ml) |
|------------------------|-----------------------|
| < 50# | 0.5 |
| 50 - 100# | 1.0 |
| > 100# | 2.0 |

4. If contact was intimate, fill out immunization card after dose (see sample) and file in monthly 'yellow fever file' to be counted at the end of the month.
 5. Fill out "Communicable Disease Case Study" and give to nurse/sanitarian in charge of hepatitis A followup with a triplicate copy sent to CDC.
 6. A yellow confidential case report card must be sent to State Health Department weekly for each hepatitis case.
- B. Investigation
1. Interview hepatitis case or a member of the immediate family and fill out "Communicable Disease Case Study" form.
 2. Determine the list of intimate contacts so that prophylactic ISG can be administered as soon as possible.

3. Insure that all contacts receive ISG as soon as possible. Make appointments for contacts to come to Health Department if necessary.
 4. People diagnosed as having or clinically suspected of having infectious hepatitis who are food handlers (waitresses, cooks, dishwashers, butchers, bakers, grocery clerks, etc.) must be prohibited from working where they have direct contact with food until they are declared non-infectious by either their private physician or the Health Officer. It is the responsibility of the staff of the Health Department to enforce this policy thru the Health Officer or Sanitation Division.
 5. Review water supply and sewage disposal systems with Sanitation Division.
- C. Maintain surveillance for additional cases. If individual sewer, do field check to insure system is working (if in high hazard area). Take water sample if on individual water supply.

DESCRIPTION:

Agent an RNA virus found in urine, feces, blood, and other body fluids.

Symptoms and course of disease: pre-icteric stage characterized by abrupt onset of such symptoms as fatigue, anorexia (lack of appetite), nausea, vomiting, abdominal discomfort and distaste for coffee and cigarettes. Physical examination at this stage may reveal low grade fever and tender liver area. With the appearance of jaundice, there is usually a decrease in the severity of symptoms. The patient is usually afebrile, but his/her liver remains palpable and tender. The feces are often beige to light brown and the urine often dark yellow or brown.

Mild or subclinical infections are common among very young children, while more severe illness is generally seen in older children and adults and those with other chronic or debilitating diseases.

Complications can include chronic liver damage and, rarely, death.

RESERVOIR:

Humans, and rarely, chimpanzees and certain other nonhuman primates.

INCUBATION AND COMMUNICABILITY:

Incubation is 15-50 days and commonly 28 days.

Susceptibility is general. One attack is thought to confer lifetime immunity. Communicable period is felt to be about two weeks prior to onset of symptoms to two weeks after onset.

Diagnosis is made on the basis of signs, symptoms and history of exposure in combination with laboratory results on such tests as SGO-T, SGP-T, bilirubin and negative tests for hepatitis B, mononucleosis and other clinically suspected causes for the illness. Some commercial laboratories have a test for hepatitis A antibody available (Abbott Labs). A modification of the commercial test can detect whether the patient's infection is recent.

CONTROL:

Health education directed toward good sanitation and personal hygiene with special emphasis on sanitary disposal of feces and proper handwashing. Proper sterilization of syringes and needles and other equipment is always important as well as the use of disposable units for parenteral injections.

Education of patient and contacts regarding methods of spread, importance of good personal hygiene and early identification and treatment of contacts.

Restriction of patient from working in high-risk occupations such as food handling, child or health care. Patient may return to work in high-risk occupation with written permission from physician or health officer stating he/she is no longer communicable.

Gamma globulin can be given to intimate contacts within two weeks of contact to diagnosed case. Gamma globulin may not prevent infection but it can reduce the severity of the disease if the contact is already incubating disease at the time gamma globulin is administered. The contact may develop mild or subclinical illness that is believed to confer lifelong immunity.

Contacts who work at high-risk occupations must be placed "under surveillance" for the full incubation period which is six weeks after the last exposure to diagnosed case. This surveillance includes administering

gamma globulin, a limited physical examination (checking the white of the eyes for yellowing and liver palpitation), interview history of liver function and periodic blood tests for liver function by a physician. Testing, light physical examination and interviews as to present health status should be repeated every two weeks (total of three times) during the incubation period.

VIRAL HEPATITIS CASE RECORD

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
NATIONAL CENTER FOR DISEASE CONTROL
Hepatitis Epidemiology
Hepatitis Laboratories Division
4402 North 7th Street
Albuquerque, Arizona 85014

| YEAR | QUARTER | STATE | COUNTY |
|----------------------|-------------|-------------------|---------------------|
| H (1) (2) (3) (4) | (5) (6) (7) | (8) (9) (10) (11) | (12) (13) (14) (15) |
| CDC CASE NO. | | DATE RECEIVED | |

PATIENT IDENTIFICATION

CLINICAL DATA

EPIDEMIOLOGIC DATA

LAB. DATA

COMMENTS:

INVESTIGATOR'S NAME (PRINT)

PHYSICIAN'S NAME

DATE OF INTERVIEW

| | | | | | |
|---|--|--|--|---|--|
| STATE GEOGRAPHIC CODE (1) (2) (3) (4) (5) DATE CASE NO. (8) (9) (10) (11) | | PATIENT'S LAST NAME (please print clearly) (12-17) | | FIRST AND MIDDLE NAME (or other) | |
| STREET ADDRESS | | TOWN OR CITY | | STATE (Zip Code) | |
| AGE (22-23) SEX (26) Years (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) | | RACE (27) 1 <input type="checkbox"/> White 2 <input type="checkbox"/> Black 3 <input type="checkbox"/> Hispanic Origin 4 <input type="checkbox"/> American Indian or Alaskan Native 5 <input type="checkbox"/> Asian or Pacific Islander 6 <input type="checkbox"/> Unknown | | OCCUPATION | |
| Reporting physician's diagnosis: (28) 1 <input type="checkbox"/> Hepatitis A (Infectious Hepatitis) 2 <input type="checkbox"/> Hepatitis B (Serum Hepatitis) 3 <input type="checkbox"/> Unspecified or Unknown | | Was the patient jaundiced? (33) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | Was the patient hospitalized? (34) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | |
| Date of first symptom: (29-30) (31-32) / (33-34) / (35-36) Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> | | I. Was there personal contact, excluding needle sharing, with known jaundiced person or hepatitis case during the 6 months prior to onset? (35) 1 <input type="checkbox"/> Yes, within 2 mos. 2 <input type="checkbox"/> Yes, 2-6 mos. prior to onset 3 <input type="checkbox"/> Both 4 <input type="checkbox"/> No 5 <input type="checkbox"/> Unknown | | II. Were raw clams or oysters eaten in the 2 months before onset? (40) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | |
| III. Were drugs such as narcotics, barbiturates, or amphetamines injected by patient during the 6 months prior to onset? (42) 1 <input type="checkbox"/> Yes, within 2 mos. 2 <input type="checkbox"/> Yes, 2-6 mos. prior to onset 3 <input type="checkbox"/> Both 4 <input type="checkbox"/> No 5 <input type="checkbox"/> Unknown | | IV. Did patient receive transfusion of blood or blood products in the six months before onset? (43) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | V. Did the patient die as a result of hepatitis? (56) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | |
| (a) Where? Name of Hospital | | Name of Bloodbank Supplying Blood and/or Components | | (b) When did the patient receive the transfusion(s)? (44) 1 <input type="checkbox"/> On 1 day, date (45-46) / (47-48) / (49-50) 2 <input type="checkbox"/> Over a 2 / day period (51-52) / (53-54) / (55-56) 3 <input type="checkbox"/> Over a period of 8 days or more, dates not necessary 4 <input type="checkbox"/> Unknown | |
| (c) Place received transfusion (with hospital name) (57-60) (61-64) (65-68) (69-72) (73-76) (77-80) (81-84) (85-88) (89-92) (93-96) (97-100) | | Whole Blood, packed red cells (48-49) (50-51) (52-53) (54-55) (56-57) (58-59) (60-61) (62-63) (64-65) (66-67) (68-69) (70-71) (72-73) (74-75) (76-77) (78-79) (80-81) (82-83) (84-85) (86-87) (88-89) (90-91) (92-93) (94-95) (96-97) (98-99) (100) | | Number of Units (101-104) | |
| VI. In the 6 months prior to onset of symptoms was the patient admitted to a hospital? (58) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | VII. In the 6 months prior to onset of symptoms did the patient have any of the following procedures performed? (59-64) (65-70) (71-76) (77-82) (83-88) (89-94) (95-100) | | (91-94) (95-98) (99-100) | |
| IX. Is the patient employed in a health-related field? (67) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | X. Is the patient associated with a hemodialysis unit or transplant program? (69) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | XI. Is the patient associated with a nursery or day care program? (71) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | |
| XII. Was the patient's serum positive for the Hepatitis B surface antigen (HBsAg, Australia antigen, HAA)? (78) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | XIII. Was the patient's serum positive for the Hepatitis B surface antibody (Anti-HBs, anti-HAA)? (79) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | | XIV. Was the patient's serum positive for the Hepatitis C surface antigen (HCV)? (80) 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Unknown | |



SALMONELLOSIS

OTHER NAMES: Food poisoning, salmonella.

CASE DEFINITION:

A salmonella case is defined as one of the following: laboratory isolation of salmonella species and a history of diarrhea or fever, or documented exposure to a suspected vehicle associated with an outbreak within three days of illness which includes fever and diarrhea or nausea or abdominal pain.

RESPONSE:

Report of individual cases or outbreaks are required. Upon receipt of report, refer to Environmental Health Division.

- I. Investigation (Within two days of report unless a group of cases is reported simultaneously - investigate as soon as possible - or there is a high expectation of foodborne salmonella - investigate immediately.)
 - A. A separate file folder must be established for each outbreak (defined as 2-5 cases within one week or within a single group having a common contact).
 - B. Investigation should include inquiry of:
 1. Domestic water
 - a. Source
 - b. Potability
 - c. Proximity to wildlife and sewage
 2. Similar illnesses of family and/or group contacts.
 3. Presence of pets, poultry or livestock.
 4. General sanitation conditions.
 5. Food handling procedures.
 6. Recent food history.
 7. Recent travel.
 8. Laboratory information - group and serotype and drug resistance pattern.
 9. Functioning of individual sewer system if in high hazard area.
 20. Recent medical history including other drugs if strain isolated has antibiotic resistance.
- C. Interview for case histories as necessary (see attached).
- D. After investigation, group cases into most probable means of spread.

1. Via food
2. Via pets or livestock
3. Person-to-person
4. Travel-related
5. Other or unknown

- E. Food handlers who are cases or carriers must not work until two successive negative cultures have been obtained.

II. Post-investigation

- A. For every outbreak (2-5 within one week or within a single group having a common carrier), a short report detailing investigation and results must be written and a file copy kept with a copy sent to the State Department of Health and Environmental Sciences.
- B. Cases or outbreaks must be reported to State Department of Health and Environmental Sciences within seven days of report by laboratory or physician.

DESCRIPTION:

Agent is a bacterial genus salmonella, with over 1700 serotypes. The disease is generally characterized by sudden explosive onset of colic-like abdominal pain, nausea, vomiting, diarrhea and fever. Feces may contain mucus and blood. Dehydration may be severe, especially in very young and elderly patients.

Clinical manifestations are variable: some persons may be asymptomatic, some may have just fever and bacteremia. The infectious agent may localize in any tissue of the body producing abscesses and causing arthritis, endocarditis, meningitis, pneumonia, or other organ infections. Salmonella food infection is distinguished from other foodborne illness by a longer incubation period (mean is usually 18-24 hours), fever and illness lasting one to three days.

RESERVOIR:

Organism is found mostly in vertebrates, both domestic and wild, especially poultry, vermin and pets.

Many animal and poultry items such as eggs, chickens, turkeys, pet foods, fertilizers, etc., harbor the organism. Animal feed which has not been heat-treated is an important factor in the chain of transmission. Flies may be vectors.

Man may become infected through contact with the feces of patients and

transient carriers, especially mild and unrecognized cases.

Transmission is most frequently by ingestion of contaminated food or fluid, and less often by direct contact with an infected person, animal or other source. Waterborne epidemics have occurred.

INCUBATION AND COMMUNICABILITY:

Incubation period usually 6 to 72 hours, commonly 12 to 36 hours, after ingesting organism. Localized infection (wounds, etc) and septicemia probably occur within one to seven days. Paratyphoid fever occurs from 1 to 21 days after exposure with average incubation of 14 days.

Patient is communicable as long as organism can be found in blood, urine, stool - usually three days to three weeks. Excretion of organism usually persists for several days or weeks after acute illness. Antibiotics may increase duration of excretion of organism. A carrier state may persist for months, especially in very small children.

DIAGNOSIS:

When presenting symptoms are gastroenteritis, isolation of causative organism from the feces is diagnostic. Bacteremia or local infection is diagnosed by recovery of organism from blood, pus, urine or other body fluids. Paratyphoid diagnosis is by isolation of salmonella species from blood, feces or other sites. NOTE: In salmonella septicemia, 30 to 50 percent of patients have underlying disease. Severity of the disease is related to the serotype of the organism, the number of organisms ingested and host factors.

CONTROL:

Restrict infected persons, household and close contacts from critical occupations (food handling, health and child care) until two stool specimens are negative by laboratory examination and have been submitted at least seven days apart and at least seven days (according to current State recommendations) after discontinuing any antibiotic therapy. Advise contacts of signs, symptoms, obtaining medical care if needed. Advise patient and contacts regarding proper sanitation of water, food and waste products, paying careful attention to personal hygiene. Discuss cooking and storage procedures for all foods. Alert persons to the hazards of raw and cracked eggs and raw milk.

Recognition, control and prevention of salmonella infection in domestic animals and pets should be stressed as well as the control of flies.

TREATMENT:

Private physician.

FOODBORNE DISEASE INVESTIGATION

At the start of the interview, an interviewer should introduce him/herself and explain the purpose of the interview in terms of the respondent's needs and goals. A rapport between interviewer and respondent needs to be established. The interviewer should first ask a broad, open question which is free of leading words; then the investigator should ask a series of supplementary probing or biasing factors so that the respondent can phrase the answer in his/her own words; then the investigator should ask a series of supplementary probing questions to get definitions of the terms used by the respondent and a fuller description of the situation; and finally, he/she should recapitulate the testimony by asking a series of questions to verify the answers. During the reply the respondent should be observed for nonverbal communication. If answers do not reach the objectives of the questions, the interviewer should ask another question that is aimed at the same objective. If answers are not free-flowing, the interviewer may let a silence develop; in such a situation, a respondent is inclined to speak on his own initiative. The interviewer should be supportive, both verbally and nonverbally, to assure the respondent of his/her interest in the information that is given. The interviewer should also limit, as much as possible, the communication of redundant or irrelevant information, but not to the extent of discouraging new or more relevant information.

Kahn and Cannell, 1957

GIARDIASIS

OTHER NAMES: Giardia enteritis, lambliasis.

CASE DEFINITION:

A giardia case requires one of the following:

- A. Laboratory identification of traphozoites or cysts in stool.
- B. Diarrhea for 5 or more days and treatment with flagyl or atabrine followed by clinical improvement.
- C. Diarrhea for 5 or more days, a history of consumption of untreated water within one month of onset of illness and treatment with atabrine or (flagyl)

RESPONSE:

Reports of individual cases or outbreaks are requested by use of the reporting form (sample page 1) to the Missoula City-County Health Department. Upon receipt of giardia report:

- I. Staff member taking call or report shall refer to Environmental Health Division to the sanitarian in charge of foodborne and waterborne disease.
 - A. Investigate reported cases within two work days of first notification keeping separate file folders for giardia outbreaks (outbreak defined as four or more related cases).
 1. Information required is:
 - a. Domestic water (source, proximity to livestock, wildlife and sewage).
 - b. Other water sources (camping, etc.).
 - c. Recent travel/immigration.
 - d. Similar illnesses in family members or group contacts.
 2. Use case report form (attached).
 - B. After investigation, classify cases tentatively to most probable means of spread (list not mutually exclusive).
 1. Via domestic water:
 - a. Provide sufficient followup to insure prevention and correction of problem.
 - b. If more than one family uses water supply - all reasonable steps shall be taken to resolve problem.
 2. Via non-domestic water - provide individual with basic information regarding safety of untreated surface waters and means of effective treatment.
 3. As result of travel or immigration.

4. Person-to-person spread.
- II. If domestic water , take steps to correct the situation.
- III. Sanitarian in charge will report to Montana Department of Health and Environmental Sciences all diagnosed cases within one week.
- IV. Write short report for inclusion in outbreak folder (for outbreaks only).

DESCRIPTION:

The agent is giardia lamblia, a flagellated protozoan.

Symptoms range from none to severe malabsorption with steatorrhea, chronic diarrhea, abdominal cramps, pale, greasy malodorous stools, anemia and weight loss. Children are especially likely to develop a chronic, recurrent illness with diarrhea, abdominal pain and distention, anorexia, nausea and vomiting. Lactose intolerance may be present.

RESERVOIR:

The source is man, wild animals, and possibly domestic animals.

Transmission is by direct fecal-oral route, or through contaminated drinking water. Distribution is worldwide. The rate of asymptomatic carriers in the U.S. may be as high as twenty per cent in areas of poor sanitation and in institutions.

Life cycle:

cysts are swallowed $\xrightarrow{(6-22 \text{ days})}$ trophozoites multiply in duodenal crypts, may involve bile duct and gallbladder \longrightarrow cysts are formed in colon \longrightarrow cysts shed in feces

INCUBATION AND COMMUNICABILITY:

Incubation period is 6 to 22 days; in waterborne epidemics may be 1-4 weeks after exposure.

Communicability lasts throughout the infection.

DIAGNOSIS:

Examination of stools for cysts or trophozoites is required (multiple stool samples are often needed and concentrated specimens may be necessary). Trophozoites may be found in duodenal aspirates.

CONTROL:

Cysts are resistant to chlorination, thus elimination of fecal contamination is necessary. Careful handwashing and general hygienic measures are necessary in institutions.

Investigate and examine feces of household members and other suspected contacts (in case of person-to-person spread), supplemented with search for environmental contamination (in general, undiagnosed cases are not a public health risk although determining water source and potability is indicated).

Hikers and backpackers should be advised about proper sanitation of drinking water.

TREATMENT:

At private physician.

Figure 2. Example of case history form (back of page)

| | | | | | |
|---|-------------------------|--------------------|-------------|--|--|
| | <u>Ill</u> | | <u>Well</u> | | |
| Food history for previous 72 hours or other specified times: | | | | | |
| Day of Illness _____ Breakfast: _____ Place _____ | Date | Hour ____ _____ | | Two Days Before Illness Date Breakfast: _____ Hour ____ Lunch: _____ Place _____ | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Lunch: _____ | Date _____ | Hour ____ | | Lunch: _____ Hour ____ | |
| Place _____ | | | | Place _____ | |
| _____ | | | | _____ | |
| _____ | | | | _____ | |
| _____ | | | | _____ | |
| _____ | | | | _____ | |
| Supper: _____ | Date _____ | Hour ____ | | Supper: _____ Hour ____ | |
| Place _____ | | | | Place _____ | |
| _____ | | | | _____ | |
| _____ | | | | _____ | |
| _____ | | | | _____ | |
| Snacks (Item, time, and place) _____ | | | | _____ | |
| | | | | | |
| History of eating suspect food _____ Source _____ Address _____ | | | | | |
| Common event and names and addresses of others at event: _____ | | | | | |
| Recent travel (locations) _____ | | | | | |
| Contacts with known cases before illness _____ | | | | | |
| Contacts after illness _____ | | | | | |
| Pets _____ | Housing condition _____ | Crowding _____ | | Water supply _____ | |
| Eccretia disposal _____ | Shellfish _____ | Milk supply _____ | | | |
| REMARKS _____ | | | | | |
| _____ _____ _____ _____ _____ _____ _____ | | | | | |
| INVESTIGATOR _____ DATE _____ | | | | | |



SECTION 3

COSTS OF CONDUCTING COMMUNICABLE DISEASE PROGRAMS

Results - Actual FY 1980 communicable disease program costs ranged from \$470 for Missoula's Hepatitis A Program to \$6842 for the TB Program. Before cost analysis worksheets were developed, Missoula program costs were estimated. Missoula program administrators are now using exact cost information for program planning and budgeting. Cost analyses will be updated yearly.

Discussion - To accurately compute program costs, personnel should keep good daily time and mileage records and accurately track costs of supplies. You can use estimates of staff time and mileage, but the cost analysis's over-all accuracy will be reduced.

Methodology - The first cost analysis sheet, the Department Overhead, will give you the overall percentage to use to allocate general department overhead to each program. Thorough instructions are printed on the back of each cost analysis.

1. Department Overhead (form page 3.2, example page 3.3)
2. Measles Program Cost Analysis (form page 3.4, example page 3.5)
3. Hepatitis A Program Cost Analysis (form pg. 3.6, example pg. 3.7)
4. Tuberculosis Program Cost Analysis (form pg. 3.8, example 3.9)
5. Giardia Program Cost Analysis (form page 3.10, example pg. 3.11)
6. Salmonella Program Cost Analysis (form page 3.12, example pg. 3.13)

Personnel Administration

The following information is for the purpose of providing a general overview of the personnel administration system. It is not intended to be a detailed description of the system.

1. Administrative Expenses

- a. Health Insurance
 - b. Administrative Expenses
 - c. Administrative Secretary
 - d. H.D. Receptionist
 - e. H.D. Accountant
 - f. Vital Statistics Clerk
 - g. Medical Consultant
 - h. Other:
- x (fringe)

2. Other Administrative Personnel Expenses

- a. Termination Reserve
- b. Recruitment
- c. General Conferences & Meetings
- d. General Training
- e. General Books & Periodicals
- f. Administrative Travel
- g. Other:

OVERHEAD

Health Department Cost Analysis

Overhead is a factor designed to calculate the total costs of administering a program. It should be noted that overhead is an estimation of the health department's administration of all department programs, all of which overlap; hence, the need for an overhead figure.

Total Administrative Salaries

This means salaries plus appropriate yearly fringe benefits and merit raises of only personnel involved in the general administration of the health department. (Other personnel may be added if other departments are organized differently. For example, a health department personnel director or assistant health officer should be added to this category.) The receptionist is the person who acts for the entire health department; the general office clerk (or a portion of her/his salary) acts as vital statistics clerk.

To calculate (a), or total administrative salaries, multiply total salaries (which should include yearly raises) by yearly fringe percentage.

Other Administrative Personnel Expenses

"Termination Reserve" means those monies set aside to pay vacation and sick pay severance to employees who quit. "Recruitment" means costs budgeted for newspaper ads, printing and other costs of filling vacant positions. "Conferences and Meetings" refers to those of general interest to health administration and not applicable to a specific program. "Training" means general management or administrative training, not that attributable to a specific program. The "Books and Periodicals" category includes general health planning, public health, and management materials of general interest and not attributable to a specific program. "Travel" means general health department trips and excludes travel for specific programs or conference travel (to be included under "Conferences and Meetings"). Blanks are provided for other categories specific to the general administration of a health department. Add all these categories to get Total Administrative Personnel Expenses (b).

Other Administrative Expenses

Expenses in this category are those which are general to the running of an agency. Since it is virtually impossible to split out the number of pencils, pieces of paper and the like used by one program or activity, it is a good deal easier to include these as a total category and be able to easily allocate them in the department overhead computation. (The only exception to this would be grants where administrative expenses are each listed and funded separately and should be allocated as such.) Office supplies, copies and printing, postage, office equipment and phone are total costs per year for the whole department excepting grant allocations. Interest on warrants is interest paid on monies borrowed from a bank to cover current department operating expenses (if applicable). Other administrative expenses should be included in this category if they are attributable to the general operation of a department. (Note: It is more accurate and easier to charge vehicle expenses to the program which uses them on a cents-per-mile basis. It is also a good deal more difficult to charge phone, office space and the like out on a program-by-program basis.)

Building and Maintenance

Housing costs are to be included in the overhead computation because of the difficulty of allocating square footages, utilities, phones, etc., to each program or activity. This category should cover all housing expenses of the department and laboratory.

Other Expenses

This category should include costs of routine audits, administrative consultants, depreciation on capital, or other similar items.

3. Other Administrative Expenses

- a. All Office Supplies _____
- b. All Copies and Printing _____
- c. All Postage _____
- d. Office Equipment & Maintenance _____
- e. All Telephone Charges _____
- f. Interest on Warrants _____

_____ admin. expenses
(c)

4. Building and Maintenance

- a. Rent OR \$_____ per sq. foot
x number of sq. feet of office,
lab, etc. _____
- b. Maintenance _____
- c. Utilities _____
- d. Insurance _____
- e. Other: _____

_____ building and
maintenance
(d)

5. Other Overhead Expenses

Other: _____

_____ other expenses
(e)

TOTAL OVERHEAD COSTS =

$$\text{Overhead Computation} = \frac{a + b + c + d + e}{\text{total H.D. salaries + fringe}} = \text{OVERHEAD (30\%)}$$



MEASLES

_____ actual
 _____ estimated

Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing measles immunizations, surveillance, investigation and followup.

1. OUTPATIENT CLINIC COSTS

- a. Personnel: RN time/iz x (salary + fringe) x # pts./yr. _____
- b. Supplies/pt. x total # pts.
- vaccine _____
- needles _____
- cotton balls _____
- other: _____
- _____ opc

2. FIELD WORK AND INVESTIGATION

- a. Personnel: RN time/indiv. case x (salary + fringe) x # pts./yr. _____
- RN time/outbreak x (salary + fringe) x # pts./yr _____
- b. Mileage @ _____¢/mi. _____
- c. Other: _____
- _____ field

3. NURSING DIVISION ADMINISTRATIVE COSTS

- a. Nursing Director _____
- b. Nursing Supervisor _____
- c. Clerical support _____
- _____ admin.

4. OVERHEAD: _____ % of total salaries + fringe _____ oh

5. TRAINING, BOOKS, ETC.

_____ train.
 _____ - revenue

TOTAL
PROGRAM
COSTS

9/80 jsh

EXPLANATION

Program Cost Analysis

Note: Each department will have its own system of tracking personnel time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. Outpatient Clinic

- a. Personnel - "RN time" means average time spent on an "average" patient. This should include filling out records and reading tests (if applicable). You may want to conduct a time study to give you accurate time per patient. If more than one nurse works for the OPC, you should use an average hourly salary.
- b. Supplies - This category includes all supplies used for each patient. Although the supplies cost could be determined either by dividing the total yearly supplies cost by the number of patients per year, or by costing each supply used for each patient, the latter method is easier and more accurate. Using the second method, figure the cost of each supply and multiply by the number needed by each patient and then multiply that total by the number of patients seen.

2. Field Work and Investigation

You need to estimate the time the OPC nurse spends on a patient, although a time study would give you more accurate nursing time spent per patient. If you are in an outbreak situation (an outbreak defined as "two or more cases from the same source, or by the professional judgment of the nurse"), a white "Communicable Disease Outbreak Cost Record" can be used to find the exact time spent on each case investigation, but be sure to include all time -- phoning, in the field, consultations, professional reading, etc. The standard per diem reimbursement figure can be used to figure mileage costs.

3. Nursing Division Administrative Cost

This category includes the costs of administering from the nursing director on down. To allocate costs, one of four methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; or 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all personnel and others involved in case/outbreak surveillance and investigation. The administrative costs should be the (number of hours) times (salary plus fringe benefits) for each category. Other administrative costs may be added if necessary.

4. Overhead

The Nursing Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as part of the cost of a nursing program. To find the percentage figure, refer to the Overhead Cost Sheet and multiply all program personnel costs (including fringe) times the overhead percentage to get the program overhead costs.

5. Training, Books, Periodicals

This category includes only training or those books and periodicals which are specific to the program. General costs should be allocated to the general overhead (see Overhead Cost Analysis).

9/2 JSH

MEASLES

Cost Analysis

The purpose of this cost analysis is to provide a
 formula for determining the costs to the health
 department of providing measles immunizations,
 surveillance, investigation and follow-up.

1. OUTPATIENT CLINIC COSTS

a. Personnel: RN time/iz x (salary + fringe) x # pts./yr.
 20 min/pt.
 $(33 \text{ hr})(4.58 \text{ hr} + 1.05) \times 592$ \$1490

b. Supplies/pt. x total # pts.
 vaccine - free from state now -
 needles .06 x 592 36
 cotton balls .01 x 592 6
 other: 12
 forms (same furnished by SDAHS) 54
 (02) 592 = 54

1544 op

2. FIELD WORK AND INVESTIGATION

a. Personnel: RN time/indiv. case x (salary + fringe) x # pts./yr. -
 Bruce handles - no 1d cost
 RN time/outbreak x (salary + fringe) x # pts./yr.
 1 case FY 80 40
 $5 \text{ hr}(4.12 + 1.09 \text{ fr})$
 estimated 1675
 none 1180

c. Other: 40

40 field

3. NURSING DIVISION ADMINISTRATIVE COSTS

a. Nursing Director salary 379
 30 hr. est. (10.88 + 1.74)
 b. Nursing Supervisor salary 53
 5 hr (9.18 + 1.47)
 c. Clerical support salary 133
 26 (4.40 + .70)
 est

565 admin.

4. OVERHEAD 30 of total salaries + fringe
 (2095) .30

628 oh

5. TRAINING BOOKS

70 - train.

not
 wait
 1180

2777 = total
 program
 costs

are op RN Salary 46 mme
 measles incl. mme op services 80 measles
 542 From State Starts

HEPATITIS A

for FY _____
 _____ actual
 _____ estimated

Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing Hepatitis A case/outbreak investigation and surveillance.

1. OUTPATIENT CLINIC COSTS

a. RN time/gg iz x (salary + fringe) x # pts./yr. _____

b. Supplies/pt x total # pts.

vaccine _____

syringe _____

cotton balls _____

c. Other: _____

_____ opc

2. FIELD WORK AND INVESTIGATION

a. Personnel: RN time/Indiv. case x (salary + fringe) x # pts./yr. _____

RN time/outbreak x (salary + fringe) x # outbreaks/yr. _____

b. Mileage @ _____¢/mi. _____

c. Other: _____

_____ field

3. NURSING DIVISION ADMINISTRATIVE COSTS

a. Nursing Director _____

b. Nursing Supervisor _____

c. Clerical support _____

_____ admin.

4. OVERHEAD: _____% of tot sal + fringe

_____ oh

5. TRAINING, BOOKS, ETC.

_____ train.

_____ - revenue

TOTAL
PROGRAM
COSTS

EXPLANATION

Program Cost Analysis

Note: Each department will have its own system of tracking personnel time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. Outpatient Clinic

- a. Personnel - "RN time" means average time spent on an "average" patient. This should include filling out records and reading tests (if applicable). You may want to conduct a time study to give you accurate time per patient. If more than one nurse works for the OPC, you should use an average hourly salary.
- b. Supplies - This category includes all supplies used for each patient. Although the supplies cost could be determined either by dividing the total yearly supplies cost by the number of patients per year, or by costing each supply used for each patient, the latter method is easier and more accurate. Using the second method, figure the cost of each supply and multiply by the number needed by each patient and then multiply that total by the number of patients seen.

2. Field Work and Investigation

You need to estimate the time the OPC nurse spends on a patient, although a time study would give you more accurate nursing time spent per patient. If you are in an outbreak situation (an outbreak defined as "two or more cases from the same source, or by the professional judgment of the nurse"), a white "Communicable Disease Outbreak Cost Record" can be used to find the exact time spent on each case investigation, but be sure to include all time -- phoning, in the field, consultations, professional reading, etc. The standard per diem reimbursement figure can be used to figure mileage costs.

3. Nursing Division Administrative Cost

This category includes the costs of administering from the nursing director on down. To allocate costs, one of four methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; or 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all personnel and others involved in case/outbreak surveillance and investigation. The administrative costs should be the (number of hours) times (salary plus fringe benefits) for each category. Other administrative costs may be added if necessary.

4. Overhead

The Nursing Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as part of the cost of a nursing program. To find the percentage figure, refer to the Overhead Cost Sheet and multiply all program personnel costs (including fringe) times the overhead percentage to get the program overhead costs.

5. Training, Books, Periodicals

This category includes only training or those books and periodicals which are specific to the program. General costs should be allocated to the general overhead (see Overhead Cost Analysis).

for FY 80
 ✓ actual
 - estimated
 244 9/10

HEPATITIS A Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing hepatitis A surveillance, investigation and control services.

1. OUTPATIENT CLINIC COSTS

- a. RN time/pt. (2 hr. x 107) = 214
 1 hr. x 107 = 107
 .5 (16.50 + 1.05) x 28 pts = 280
 107
- b. Supplies/pt x total # pts.
 vaccine (egg free from state now)
 syringe .06 x 28 = 1.70
 cotton balls .01 x 28 = .30
 other: forms @ .02 x 28 = .60
 3

110 OPC

2. FIELD WORK AND INVESTIGATION - none 74 80

- a. Personnel: RN time/indiv. case x
 (salary + fringe) x #
 pts per year
 RN time/pt. case x
 (salary + fringe) x
 # pts per year
- b. Mileage .1675 x 107 = 17.92
- c. Other

field

3. NURSING DIV. ADMINISTRATIVE COSTS

- a. Nsg. Director 252
 20 (10.80 + 1.74)
- b. Nsg. Supervisor 0 this yr -
- c. clerical support salary 0 this yr -

252 admin.
 108

4. OVERHEAD: 30 107 + 252 = 359 x .30

5. TRAINING, BOOKS, none FY 80

train.
 470
 214 +
 470
 total
 program
 costs

* one of year's charges
 + not available



Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing TB case/outbreak investigation and surveillance.

1. OUTPATIENT CLINIC COSTS

a. RN time/tb test x (salary + fringe) x # pts. tested and read _____

b. Supplies/pt x total # pts.

TB test, cotton ball, record cost/pt. x # pts. _____

TB test, cotton ball, record cost/pt. x # pts. _____

c. X-ray financial assistance x # pts. _____

d. Other: _____

_____ opc

2. FIELD WORK AND INVESTIGATION

a. Personnel: RN time/pt. x (salary + fringe) x # pts. _____

b. Mileage costs: _____ mi./pt. x _____ c/ml. _____

c. Other: _____

_____ field

3. NURSING DIVISION ADMINISTRATIVE COSTS

a. Nursing Director _____

b. Nursing Supervisor _____

c. Clerical support _____

_____ admin.

4. OVERHEAD: _____ % x tot sal + fringe _____

_____ oh

5. TRAINING, BOOKS, ETC. _____

_____ train.

_____ - revenue

TOTAL
PROGRAM
COSTS

EXPLANATION

Program Cost Analysis

Note: Each department will have its own system of tracking personnel time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. Outpatient Clinic

- a. Personnel - "RN time" means average time spent on an "average" patient. This should include filling out records and reading tests (if applicable). You may want to conduct a time study to give you accurate time per patient. If more than one nurse works for the OPC, you should use an average hourly salary.
- b. Supplies - This category includes all supplies used for each patient. Although the supplies cost could be determined either by dividing the total yearly supplies cost by the number of patients per year, or by costing each supply used for each patient, the latter method is easier and more accurate. Using the second method, figure the cost of each supply and multiply by the number needed by each patient and then multiply that total by the number of patients seen.

2. Field Work and Investigation

You need to estimate the time the OPC nurse spends on a patient, although a time study would give you more accurate nursing time spent per patient. If you are in an outbreak situation (an outbreak defined as "two or more cases from the same source, or by the professional judgment of the nurse"), a white "Communicable Disease Outbreak Cost Record" can be used to find the exact time spent on each case investigation, but be sure to include all time -- phoning, in the field, consultations, professional reading, etc. The standard per diem reimbursement figure can be used to figure mileage costs.

3. Nursing Division Administrative Cost

This category includes the costs of administering from the nursing director on down. To allocate costs, one of four methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; or 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all personnel and others involved in case/outbreak surveillance and investigation. The administrative costs should be the (number of hours times (salary plus fringe benefits) for each category. Other administrative costs may be added if necessary.

4. Overhead

The Nursing Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as part of the cost of a nursing program. To find the percentage figure, refer to the Overhead Cost Sheet and multiply all program personnel costs (including fringe) times the overhead percentage to get the program overhead costs.

5. Training, Books, Periodicals

This category includes only training or those books and periodicals which are specific to the program. General costs should be allocated to the general overhead (see Overhead Cost Analysis).

T B

Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing TB case/outbreak investigation and surveillance.

1. OUTPATIENT CLINIC COSTS

- a. RN time/tb test x (salary + fringe)
 x # pts. tested and read @ 10 min / pt.
 (17 hr) (6.58 + 1.05 fr.) (542 pts.) \$ 703
- b. Supplies/pt x total # pts.
 TB test, cotton ball, record cost/
 pt. x # pts.
 [(29 / test) + .01 + .03] x 510 168
- TB test, cotton ball, record cost/
 pt. x # pts.
 (2.64 + .13 + .01 + .03) (32) 90
- c. x-ray financial assistance x # pts. 306
- d. Other: —

1266 ope

2. FIELD WORK AND INVESTIGATION

- a. Personnel: RN time/pt x (salary + fringe) x # pts.
 440 hrs. (actual) (7.14 + 1.14 fr.) + 12 hrs. OVR
 + 12 hrs. OVR 3743
- b. Mileage costs: mi. x c/mi.
 (10 min / 62 pts) (1675 / mi.) 54
- c. Other: —

3797

3. NURSING DIV. ADMINISTRATIVE COSTS

- a. Asst. Director
 (20 hr) (10.88 + 1.74) 252
- b. Nsg. Supervisor
 (48 hr) (9.18 + 1.47) 511
- c. Clerical support
 (46) (4.40 + .70) 133

896 admin.

4. OVERHEAD: 30

1603 OH

5. TRAINING, BOOKS, ETC.:

— train.
7562
720 - revenue
6842 - total program costs

GIARDIA

Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing giardiasis case/outbreak investigation and surveillance.

1. PERSONNEL

a. Sanitarian time/indiv. case x (salary + fringe) x # cs/yr. _____

b. Sanitarian time/outbreak x (salary + fringe) x # outbreaks _____

c. Other personnel: _____

_____ personnel

2. ENVIRONMENTAL HEALTH ADMINISTRATION COSTS

a. Environmental Health Director _____

b. Environmental Health Supervisor _____

c. Environmental Health Clerical support _____

_____ admin.

3. MILEAGE

a. _____¢/mi x mi. x _____ cases _____

b. _____¢/mi. x mi. x outbreak(s) _____

_____ mileage

4. TRAINING, BOOKS, PERIODICALS (specific only)

_____ train.

5. OVERHEAD: _____% of tot. salaries + fringe

_____ oh

TOTAL GIARDIA PROGRAM COSTS

EXPLANATION

Program Cost Analysis

Note: Each department will have its own system of tracking personnel time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. Personnel

If more than one staff member is responsible for disease surveillance and investigation, you may need to use an averaged salary figure. If actual time spent on each case/outbreak is not recorded routinely, use the best estimate available. An outbreak is generally defined as "two or more cases from the same source, or by the professional judgment of the sanitarian." The heading "Other Personnel" may include nurses or other health department investigators.

2. Environmental Health Administration Costs

This category is designed to include the costs of administering a program from the environmental health director on down. To allocate costs, one of four methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all environmental health personnel and others involved in case/outbreak surveillance and investigation.

The administration costs should be (number of hours) x (salary plus fringe benefits) for each category. Other administrative cost categories may be added as necessary.

3. Mileage

If records are not kept, an average mileage may be estimated per case and per outbreak. Mileage charges are generally held to be the per diem reimbursement the federal/State government uses.

4. Training, Books, Periodicals

This category is to include only training or those books and periodicals (journals, trade publications, etc.) which are specific to the program. General public health training, books and periodicals should be allocated on the Overhead Cost Analysis.

5. Overhead

The Environmental Health Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as they are costs of environmental health programs. To find the percentage figure, refer to the Overhead Cost Sheet and multiply all program personnel costs (including fringes) times the overhead percentage to get program overhead costs.

for FY 1980
 ✓ actual
 — estimated
 JWH 4/1/80

GIARDIA
 Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing giardiasis case/outbreak investigation and surveillance.

1. PERSONNEL

- a. Sanitarian hourly time/individual case
 x (salary + fringe) x # cases yearly
 13 cases at est. 1 hr. ea. (7.75 sal. c.o. in)
 (1) (7.75 + 1.24) (13) = 117
- b. Sanitarian hourly time/outbreak x
 (salary + fringe) x # outbreaks
 (1 outbreak of 9 cases)
 (1) (7.75 + 1.24) (30 hrs. est.) = 270
- c. Other Personnel: 546
 mag.
 est. 1 hr. ea. 69 cases South & (Aime)
 one mag. Sal. (6.82 + 1.09) 69 = 933 personnel

2. ENV. HEALTH ADMINISTRATION COSTS

- a. EH Director 138
 (11.91 + 1.90) (10 hrs. est.)
- b. EH Supervisor —
 = dir. (a) — none —
- c. EH Clerical Support 35
 (5.08 + .81) 6 hrs. est.
- 173 EH admin.

3. MILEAGE

- a. c/mi. x miles x cases —
 none
- b. c/mi. x miles x outbreak(s) — 2 —
 (est 10 mi) (.1675 per mi)
- 2 mileage

4. TRAINING BOOKS, PERIODICALS (specific only)

none

— train, bk

5. OVERHEAD @ 30 x tot. salaries + fringe

(1106)(30)

332

332

OH

TOTAL GIARDIA PROGRAM COSTS

1440

SALMONELLA

for FY _____
 _____ actual
 _____ estimated

Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing salmonella case/outbreak investigation and surveillance.

1. PERSONNEL

- a. Sanitarian time/indiv. case x (salary + fringe) x
 # cases/yr. _____
- b. Sanitarian time/outbreak x (salary + fringe) x # outbreaks _____
- c. Other Personnel _____ personnel

2. ENVIRONMENTAL HEALTH ADMINISTRATION COSTS

- a. Environmental Health Director _____
- b. Environmental Health Supervisor _____
- c. Environmental Health Clerical support _____ admin.

3. MILEAGE

- a. ____¢/mi. x mi. x ____ cases _____
- b. ____¢/mi. x mi. x outbreak(s) _____ mileage

4. TRAINING, BOOKS, PERIODICALS (specific only) _____ train.

5. OVERHEAD: ____% of tot. sal. + fringe _____ oh

TOTAL SALMONELLA PROGRAM COSTS _____

EXPLANATION

Program Cost Analysis

Note: Each department will have its own system of tracking personnel time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. Personnel

If more than one staff member is responsible for disease surveillance and investigation, you may need to use an averaged salary figure. If actual time spent on each case/outbreak is not recorded routinely, use the best estimate available. An outbreak is generally defined as "two or more cases from the same source, or by the professional judgment of the sanitarian." The heading "Other Personnel" may include nurses or other health department investigators.

2. Environmental Health Administration Costs

This category is designed to include the costs of administering a program from the environmental health director on down. To allocate costs, one of four methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all environmental health personnel and others involved in case/outbreak surveillance and investigation.

The administration costs should be (number of hours) x (salary plus fringe benefits) for each category. Other administrative cost categories may be added as necessary.

3. Mileage

If records are not kept, an average mileage may be estimated per case and per outbreak. Mileage charges are generally held to be the per diem reimbursement the federal/State government uses.

4. Training, Books, Periodicals

This category is to include only training or those books and periodicals (journals, trade publications, etc.) which are specific to the program. General public health training, books and periodicals should be allocated on the Overhead Cost Analysis.

5. Overhead

The Environmental Health Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as they are costs of environmental health programs. To find the percentage figure, refer to the Overhead Cost Sheet and multiply all program personnel costs (including fringes) times the overhead percentage to get program overhead costs.

SALMONELLA
Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing salmonella case/outbreak investigation and surveillance.

1. PERSONNEL

- a. Sanitarian hourly time/individual case
 x (salary + fringe) x # cases yearly
 12 cases @ 85% 1 hr. ea.
 $(7.75 + 1.24) 12 =$ \$ 108
- b. Sanitarian hourly time/outbreak x
 (salary + fringe) x # outbreaks
 1 typhoid salmonella
 1 (40 hrs. est.) (7.75 + 1.24) 360
- c. Other Personnel:
 neg. on outbreak (30 hr. est.) (6.25 + 1.09)
 $= 237$
 neg. supern (9.18 + 1.47) 20 = 213

\$ 918 personnel

2. ENV. HEALTH ADMINISTRATION COSTS

- a. EH Director
 (10 hr. tot. est.) (11.91 + 1.90) 138
- b. EH Supervisor
 none used (= dir. (a)) -
- c. EH Clerical Support
 (5.08 + .81) (6 hrs. est.) 35

173 ch admin.

3. MILEAGE

- a. c/mi. x miles x ca c
 (est. 5 mi total) (.16754/mi.) 1
- b. c/mi. x miles x outbreak(s)
 (est. 25 mi total) (.1675/mi.) 4

5 mileage

4. TRAINING, BOOKS, PERIODICALS (specific only)

- train, bk

5. OVERHEAD @ 30% x tot. salaries + fringe

$1091 \times 30\% =$

327

327 OH

TOTAL SALMONELLA PROGRAM COSTS

\$ 1420

SECTION 4

REFERRALS FOR SERVICE - PROTOCOL AND REFERRAL RECORD

Results - A. Protocol: The Missoula Health Department did not have a written guide describing acceptable and non-acceptable referrals until the Referral Protocol (page 4.2) was developed. The protocol, intended to quantify what types of patients and under what conditions referrals for service are to be accepted, helps insure agency consistency. The Department was also concerned with a low acceptance to referral ratio. The protocol is currently being tested in Missoula until approximately October, 1981 to determine if it is accurate, workable, and complete. Analyzing referral forms will show whether or not the protocol is being used effectively.

B. Referral Record: The Record (page 4.5) also insures consistency and accuracy in telephone referrals from both health professionals and the public. A referral log (cited in the original evaluation plan, Section 6) would also be effective, but the advantage of a two-part Referral Record is that one copy can be kept for a referral file and one copy can be routed to the nurse who is assigned to handle the case. The Record has been proven to be very effective when it is filled out completely.

Discussion - The purpose of both the Protocol and Referral Record is to insure program consistency. Home Health administrators felt that there was too much time wasted with referrals that were not admitted to the caseload (45% of referrals were on patients who were not added to the caseload), so both the Protocol and Referral Record are seen as a way to correct this problem.

Methodology - A. Protocol: The Protocol should be reviewed by nursing staff and clerical personnel in a training session or staff meeting. After it has been used for six months (or quarterly), it should be evaluated for effectiveness. One way to evaluate the Protocol is to see if the percentage of cases accepted to total referrals has improved.

B. Referral Record: To be serviceable, a record must be completely filled out for each referral. It can be designed so that a home health nurse or supervisor receives one copy, while the other copy is filed for a permanent record. Referral Records should be reviewed at set time periods to insure they are being filled out completely and to gather home health statistics.

TWO-YEAR OLD IMMUNIZATION SURVEY

MISSOULA COUNTY AND MONTANA

The data for these tables is taken from the State Health Department's report: "Twenty-Four Month Survey for 19__ Births: Immunization Program," which is kept by Bruce DeSonia, Field Epidemiologist.

Missoula-Specific Data

1. Polio data is found under "Surveyed Children Receiving Polio Vaccinations (Three (+) Vaccination). By county. See Attachment I.
2. DPT data is found under "Surveyed Children Receiving DPT Vaccinations (Three (+) Vaccination). By county. See Attachment II.
3. Measles and Rubella are found on the same page, "Surveyed Children Receiving Measles and Rubella Vaccinations." By county. See Attachment III.

Montana-Specific Data

This data can be found one of two places and provides for a good double-check on the accuracy of figures.

1. At the bottom of each of the above-listed pages, a total is given. The total equals the State's percentage. See Attachment IV.
2. A summary, "Survey Results - Immunization Levels for Two-Year Olds," lists the State's percentage and should equal the total percentage given at the bottom of each individual immunization page. See Attachment V.
3. If the totals do not equal, add the average percentage (separated from individual percentages by a }) and divide by the number of percentages used. This is the correct percentage to use.

TWO-YEAR OLD IMMUNIZATION SURVEY

MISSOULA COUNTY

| | 1974 ¹ | 1975 ² | 1976 ³ | 1977 ⁴ | 1978 ⁵ | 1979 ⁶ | 1980 ⁷ | 1981 | 1982 | 1983 |
|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|------|------|
| Polio (3+ doses) | 85% | 87% | 89% | 83% | 86% | -- | 89% | | | |
| DPT (3+ doses) | 93% | 95% | 94% | 91% | 93% | -- | 94% | | | |
| Measles | 73% | 76% | 89% | 89% | 94% | -- | 93% | | | |
| Rubella | 65% | 69% | 85% | 90% | 93% | -- | 91% | | | |

Born in:

¹January-June, 1972⁶No Survey for 1977²January-June, 1973⁷January-June 1978³January-June, 1974⁴January-June, 1975⁵January-June, 1976

TWO-YEAR OLD IMMUNIZATION SURVEY

MONTANA

| | 1974 ¹ | 1975 ² | 1976 ³ | 1977 ⁴ | 1978 ⁵ | 1979 ⁶ | 1980 ⁷ | 1981 | 1982 | 1983 |
|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|------|------|
| Polio (3+ doses) | 70% | 73% | 78% | 88% | 88% | -- | 91% | | | |
| DPT (3+ doses) | 78% | 83% | 86% | 94% | 94% | -- | 94% | | | |
| Measles | 81% | 80% | 83% | 92% | 90% | -- | 91% | | | |
| Rubella | 79% | 75% | 78% | 90% | 89% | -- | 89% | | | |

Born in:

¹January-June, 1972⁶No Survey for 1977²January-June, 1973⁷January-June 1978³January-June, 1974⁴January-June, 1975⁵January-June, 1976

ATTACHMENT I

SURVEYED CHILDREN RECEIVING POLIO VACCINATIONS

| <u>County</u> | <u>No Vaccinations</u> | | <u>One Vaccination</u> | | <u>Two Vaccinations</u> | | <u>Three (+) Vaccinations</u> | |
|---------------|----------------------------|-----|----------------------------|-----|-----------------------------|-----|-----------------------------------|-----|
| Yellowstone | 0 | 0 | 3 | 3% | 16 | 16% | 81 | 81% |
| Cascade | 2 | 2% | 10 | 10% | 23 | 22% | 69 | 66% |
| Missoula | 1 | 1% | 1 | 1% | 13 | 11% | 106 | 87% |
| Hill | 3 | 4% | 4 | 5% | 20 | 27% | 48 | 64% |
| Fergus | 4 | 11% | 3 | 8% | 10 | 28% | 19 | 53% |
| | } | | } | | } | | } | |
| | | | | | | | | |
| Flathead | 7 | 11% | 2 | 3% | 5 | 8% | 50 | 78% |
| Lincoln | 1 | 4% | 3 | 13% | 9 | 37% | 11 | 46% |
| Lake | 1 | 4% | 1 | 4% | 2 | 9% | 20 | 83% |
| | } | | } | | } | | } | |
| | | | | | | | | |
| Silver Bow | 1 | 2% | 5 | 12% | 4 | 9% | 33 | 77% |
| Lewis & Clark | 1 | 3% | 2 | 6% | 2 | 6% | 29 | 85% |
| Gallatin | 1 | 3% | 1 | 3% | 8 | 28% | 19 | 66% |
| Deer Lodge | 1 | 1% | 2 | 13% | 6 | 40% | 6 | 40% |
| | } | | } | | } | | } | |
| | | | | | | | | |
| Valley | 2 | 6% | 2 | 6% | 8 | 26% | 19 | 62% |
| Dawson | 0 | 0 | 2 | 6% | 6 | 17% | 28 | 77% |
| Custer | 0 | 0 | 4 | 11% | 4 | 11% | 28 | 78% |
| Roosevelt | 0 | 0 | 1 | 4% | 5 | 21% | 18 | 75% |
| | } | | } | | } | | } | |
| | | | | | | | | |
| TOTALS | 25 | 3% | 46 | 6% | 141 | 18% | 584 | 73% |



ATTACHMENT II

SURVIVED CHILDREN RECEIVING DPI VACCINATIONS

| <u>County</u> | <u>No</u> <u>Vaccinations</u> | | <u>One</u> <u>Vaccination</u> | | <u>Two</u> <u>Vaccinations</u> | | <u>Three (+)</u> <u>Vaccinations</u> | |
|---------------|----------------------------------|----|----------------------------------|-----|-----------------------------------|-----|---|-----|
| Yellowstone | 0 | 0 | 3 | 3% | 5 | 5% | 92 | 92% |
| Cascade | 2 | 2% | 10 | 10% | 20 | 19% | 72 | 69% |
| Missoula | 1 | 1% | 1 | 1% | 4 | 3% | 115 | 95% |
| Hill | 3 | 4% | 3 | 4% | 18 | 24% | 51 | 68% |
| Fergus | 3 | 8% | 2 | 6% | 6 | 17% | 25 | 69% |
| Flathead | 4 | 6% | 2 | 3% | 1 | 2% | 57 | 89% |
| Lincoln | 1 | 4% | 3 | 12% | 4 | 16% | 17 | 68% |
| Lake | 1 | 4% | 0 | 0 | 1 | 4% | 22 | 92% |
| Silver Bow | 2 | 5% | 2 | 5% | 2 | 5% | 37 | 85% |
| Lewis & Clark | 0 | 0 | 1 | 3% | 2 | 6% | 31 | 91% |
| Gallatin | 1 | 3% | 1 | 3% | 2 | 7% | 25 | 87% |
| Deer Lodge | 0 | 0 | 3 | 20% | 3 | 20% | 9 | 60% |
| Valley | 0 | 0 | 2 | 7% | 5 | 16% | 24 | 77% |
| Dawson | 0 | 0 | 0 | 0 | 1 | 3% | 35 | 97% |
| Custer | 0 | 0 | 3 | 8% | 5 | 14% | 28 | 78% |
| Roosevelt | 0 | 0 | 1 | 4% | 1 | 4% | 22 | 92% |
| TOTALS | 18 | 2% | 37 | 5% | 80 | 10% | 662 | 83% |



ATTACHMENT III

SURVEYED CHILDREN RECEIVING MEASLES AND RUBELLA VACCINATIONS

| <u>County</u> | <u>Measles Vaccination</u> | | <u>Rubella Vaccination</u> | |
|---------------|--------------------------------|-----|--------------------------------|-----|
| Yellowstone | 88 | 88% | 84 | 84% |
| Cascade | 88 | 85% | 83 | 80% |
| Missoula | 92 | 76% | 83 | 69% |
| Hill | 60 | 80% | 57 | 76% |
| Fergus | 27 | 75% | 25 | 69% |
| | } 78% | | } 74% | |
| Flathead | 49 | 77% | 39 | 61% |
| Lincoln | 16 | 64% | 14 | 56% |
| Lake | 16 | 67% | 15 | 63% |
| | } 72% | | } 60% | |
| Silver Bow | 37 | 86% | 37 | 86% |
| Lewis & Clark | 30 | 88% | 30 | 88% |
| Gallatin | 24 | 83% | 25 | 86% |
| Deer Lodge | 14 | 93% | 13 | 87% |
| | } 87% | | } 87% | |
| Valley | 25 | 81% | 25 | 81% |
| Dawson | 31 | 86% | 30 | 83% |
| Custer | 19 | 53% | 20 | 56% |
| Roosevelt | 18 | 75% | 16 | 67% |
| | } 73% | | } 72% | |
| TOTALS | 634 | 80% | 596 | 75% |

ATTACHMENT IV

SURVEYED CHILDREN RECEIVING MEASLES AND RUBELLA VACCINATIONS

| <u>County</u> | <u>Measles Vaccination</u> | | <u>Rubella Vaccination</u> | |
|---------------|--------------------------------|------------|--------------------------------|-----|
| Yellowstone | 88 | 88% | 84 | 84% |
| Cascade | 88 | 85% | 83 | 80% |
| Missoula | 92 | 76% | 83 | 69% |
| Hill | 60 | 80% | 57 | 76% |
| Fergus | 27 | 75% | 25 | 69% |
| | } 78% | | } 74% | |
| Flathead | 49 | 77% | 39 | 61% |
| Lincoln | 16 | 64% | 14 | 56% |
| Lake | 16 | 67% | 15 | 63% |
| | } 72% | | } 60% | |
| Silver Bow | 37 | 86% | 37 | 86% |
| Lewis & Clark | 30 | 88% | 30 | 88% |
| Gallatin | 24 | 83% | 25 | 86% |
| Deer Lodge | 14 | 93% | 13 | 87% |
| | } 87% | | } 87% | |
| Valley | 25 | 81% | 25 | 81% |
| Dawson | 31 | 86% | 30 | 83% |
| Custer | 19 | 53% | 20 | 56% |
| Roosevelt | 18 | 75% | 16 | 67% |
| | } 73% | | } 72% | |
| <u>TOTALS</u> | 634 | <u>80%</u> | 596 | 75% |

If a particular immunization total (Attachment IV) does not equal the percentage given in Attachment V, add the average county percentages for that particular immunization and divide by the total number of percentages used.

EXAMPLE: If the Measles percentage did not equal, to find which percentage to use:

add 1 - 88%

2 - 85%

3 - 76%

4 - 78%

5 - 72%

6 - 87%

7 - 73%

divide: $\frac{559}{7} = 79.85\% = 80\%$

ATTACHMENT V

MONTANA

SURVEY RESULTS -- Immunization Levels for Two-Year Olds

| | 1974 Results * | 1975 Results ** |
|----------------------|----------------|-----------------|
| | <u>Percent</u> | <u>Percent</u> |
| Polio (3+ doses) | 70% | 73% |
| DPT (3+ doses) | 79% | 83% |
| Measles | 81% | <u>80%</u> |
| Rubella | 79% | 75% |
| Polio (3+), DPT (3+) | | |
| Measles and Rubella | 60% | 62% |

* January - December, 1972

** January - June, 1973

SECTION 5

OUTBREAK OUTCOME

Results - During the evaluation test period, Missoula County had just one outbreak. The salmonella outbreak (July - September 1980) cost the health department \$11,410 and involved over 977 hours of staff time. The outbreak not only was a trial by fire for the new reporting system, but strengthened the communicable disease team and department outbreak procedures. The communicable disease team reviewed the salmonella outbreak records for speed, accuracy, effectiveness and outcome of Department response. The team stressed that the Department should more closely follow protocols for investigation (result: Salmonella Protocol, page 2.22 and Communicable Disease Reporting Protocol, page 1.4), so that all staff working on the outbreak know their responsibilities. The speed, accuracy, and effectiveness of Department response was judged to be adequate.

Discussion - In the midst of an outbreak, it is hard for staff to remember to carefully track their outbreak hours, mileage and supplies. If your department routinely keeps complete staff time records, your chances of having accurate outbreak cost information are better. If not, be sure to remind staff to report their time and mileage.

Methodology - The outbreak record (page 5.2) is designed to record outbreak staff time and mileage if your department does not have other records in use. All staff members involved in outbreak investigation should carefully record their time and mileage. Mileage multiplied by the standard rate (usually \$.20/mile) and time multiplied by hourly wage plus fringe benefit equals personnel cost.

The outbreak cost analysis (page 5.3) includes other department inputs — administrative costs, overhead, and supplies. A worksheet to compute department overhead is included to insure allocation of general expenses such as department administration (health officer, accountant, administrative support staff input), utilities, rent, general training, etc. See 3.2 of this Guide.

An outbreak report, also part of the outcome evaluation, is shown on page 5.5.

COMMUNICABLE DISEASE
OUTBREAK COST RECORD

(To be completed by health dept.
staff when investigating out-
breaks of CD. For definition
of outbreak, see back of page.)

Name: _____

| Date | Activity | Time | Miles | RATE | COST |
|------|----------|------|-------|------|------|
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |

Comments:

COMMUNICABLE DISEASE
OUTBREAK COST RECORD

(To be completed by health dept.
staff when investigating out-
breaks of CD. For definition
of outbreak, see back of page.)

Name: _____

| Date | Activity | Time | Miles | RATE | COST |
|------|----------|------|-------|------|------|
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |
| | | : | | | |

Comments:

FOR PURPOSES OF THIS COST STUDY
PLEASE USE THESE DEFINITIONS OF OUTBREAKS:

Giardia - Two or more cases from the same
(or a similar) source, or by
professional judgement.

Hepatitis A - Three or more cases or an
increase in the number of cases
in approximately the same time
period.

Measles - One or more cases.

Salmonella - Two or more cases from the same
(or a similar) source or by
professional judgement.

TB - One or more cases.

FOR PURPOSES OF THIS COST STUDY
PLEASE USE THESE DEFINITIONS OF OUTBREAKS:

Giardia - Two or more cases from the same
(or a similar) source, or by
professional judgement.

Hepatitis A - Three or more cases or an
increase in the number of cases
in approximately the same time
period.

Measles - One or more cases.

Salmonella - Two or more cases from the same
(or a similar) source or by
professional judgement.

TB - One or more cases.

OUTBREAK COST ANALYSIS

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing outbreak investigations.

1. PERSONNEL

- a. RN time/outbreak x (salary + fringe) x # outbreaks _____
- b. Sanitarian hourly time/outbreak x (salary + fringe) x # outbreaks _____
- c. Laboratory technician time/outbreak x (salary + fringe) x # outbreaks _____
- d. Other personnel: _____ personnel

2. ADMINISTRATION COSTS

- a. EH Director _____
- b. Nsg. Director _____
- c. Nsg. Supervisor _____
- d. Clerical support _____ admin. costs

3. MILEAGE

- a. __¢/mi. x __ miles x outbreaks (RN) _____
- b. __¢/mi. x __ miles x outbreaks (San) _____
- c. Other: _____ mileage

4. OUTBREAK SUPPLIES

- a. supplies/pt x total # pts. (list supplies) _____
- b. laboratory supplies/pt x total # pts. (list supplies) _____
- c. Other: (list) _____ supplies

5. OTHER (list)

_____ other

6. OVERHEAD @ ____% x tot. salaries + fringe _____ overhead

TOTAL OUTBREAK COSTS

Outbreak: Salmonella
 Dates: 7/80 to 9/80
 (80 confirmed)

OUTBREAK COST ANALYSIS

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing outbreak investigations.

1. PERSONNEL

- a. RN time/outbreak x (salary + fringe) x # outbreaks \$ 1541
 (8.33)(185 hrs)
 b. Sanitarian hourly time/outbreak x (salary + fringe) x # outbreaks 4141
 (9.86)(420)
 c. Laboratory technician time/outbreak x (salary + fringe) x # outbreaks 85
 (10.62)(8 hrs)
 d. Other personnel: -

5767 personnel

2. ADMINISTRATION COSTS

- a. EH Director 4 hrs x 15.13 sal + fr. 61
 b. Nsg. Director 90 hrs x 13.82 sal + fr. 1244
 c. Nsg. Supervisor 30 hrs x 11.13 sal + fr. 352
 d. Clerical support 240 hrs x 5.24 sal + fr. 1258

2915 admin. cos

3. MILEAGE

- a. 18¢/mi. x 50 miles x outbreak (RN) 9
 b. 18¢/mi. x 50 miles x outbreak (San) 9
 c. Other: + -

18 mileage

4. OUTBREAK SUPPLIES

- a. supplies/pt x total # pts. (list supplies) -
 b. laboratory supplies/pt x total # pts. (list supplies) 90
90 @ 20¢ lab - cups, etc.
 c. Other: (list) 15
shipping - samples @ \$15

105 supplies

5. OTHER (list)

- other

6. OVERHEAD @ 30% x tot. salaries + fringe

2605

2605 overhead

$$8682 \times 30\% = 2605$$

TOTAL OUTBREAK COSTS
 (Health Dept only)

\$ 11,410

* See attached for
 OTHER COSTS - Health
 Dept & OUTSIDE

24,507 OTHER AGENCY &
 Ptg. COSTS
\$ 35,917 5/8/80
 Jsthead

ESTIMATED

OTHER SALMONELLA COSTS
Federal, State, Other Local Agencies
Patients' Costs

ESTIMATED

Center for Disease Control

| | | |
|----------------------------------|------------|-------|
| 1 staff @ \$15/hr x 40 hrs | \$600 | |
| Airfare, Seattle-Missoula | 160 | |
| Lab, Atlanta (15 samples @ \$10) | <u>150</u> | \$910 |

State Agencies

| | | |
|--|------------|--------|
| Livestock, Helena (2 staff) 55 hours total @ \$15 | \$825 | |
| Travel | 166 | |
| Livestock, Missoula (2 staff) 50 hours total @ \$12 | 600 | |
| Livestock, Lab (150 samples @ \$10) | 1500 | |
| Livestock, Ronan (1 staff) 25 hrs @ \$15 | 374 | |
| Travel (3 days @ 50 miles) | 54 | |
| State Health Department, Preventive Health Services (16 @ \$10) + (40 @ \$20) | 160 960 | |
| Travel (5 trips @ 230 miles each) | 207 | |
| State Health Department, Butte Epidemiologist (15 @ \$10) + 280 miles | 150 50 | |
| State Health Department, Missoula Epidemiologist (95 hrs @ \$10) | 950 | |
| State Lab (30 samples @ \$15) | <u>450</u> | \$6447 |

County Attorney

| | | |
|--------------------|-------|-------|
| 16 hours x \$10/hr | \$160 | \$160 |
|--------------------|-------|-------|

Salmonella Patients

| | | |
|--|--------------|-----------------|
| 15 patients hospitalized - average 4 days @ \$225 ^(est, Msl) | 3,375 | |
| 2 patients couldn't work for 3 weeks: 540 @ \$4.50/hr; 870 @ \$7.25/hr. | 1,410 | |
| Other lost wages - estimated @ 2 days for 26 of working age | <u>2,080</u> | <u>\$16,990</u> |

| | | |
|---------------|--|------------------------|
| Total "Other" | | <u><u>\$24,507</u></u> |
|---------------|--|------------------------|

A COMMON SOURCE OUTBREAK OF MULTIPLE DRUG RESISTANT

SALMONELLA TYPHIMURIUM - MONTANA

An outbreak of Salmonella typhimurium gastroenteritis epidemiologically linked to a local dairy selling raw cow's milk occurred June 25 - Aug. 3, 1980 in Missoula, Montana.

The increased gastrointestinal illness resulting from this organism was first noted in late June. During the course of the outbreak, active surveillance identified 77 cases of gastroenteritis, from which Salmonella Group B was isolated. Fifteen patients were hospitalized. An additional 28 presumptive cases were identified through public inquiry and surveillance.

Demographic data and food histories were obtained by means of a questionnaire survey administered in July and early August to all confirmed and presumptive cases, as well as to age and sex matched neighborhood controls selected by confirmed cases. In addition, the survey was administered to a second control group (laboratory controls) made up of age and sex matched individuals with recent stool samples or rectal swabs negative for Salmonella. In addition to the 77 confirmed cases and the 28 presumptive cases, 40 neighborhood controls and 37 laboratory controls were surveyed.

A confirmed case was defined as a person with diarrhea or abdominal cramps or fever from whom Salmonella Group B was isolated. A presumptive case was defined as a person with an onset of illness between June 15 and August 15, lasting two or more days and consisting of abdominal cramps or diarrhea and fever.

The 77 confirmed cases ranged in age from 3 weeks to 71 years (median 14 years), 35 were male, and 42 were female. Sixty-four (64) lived in the Missoula metropolitan area, 8 lived within 50 miles of Missoula, and 5 occurred in patients more than 50 miles distant. Of the confirmed cases, 96% reported diarrhea, 92% fever, 86% abdominal cramps, 66% headache, 50% chills, 49% nausea, and 32% vomiting.

The questionnaire requested a history of food consumption during the three days preceding onset of illness. 59 of 77 (77%) confirmed cases, 22 of 28 (79%) presumptive cases, 6 of 40 (15%) neighborhood controls, and 9 of 37 (24%) laboratory controls had consumed raw milk from the area's only licensed raw cow's milk dairy within that period. Of people surveyed, those who reported buying raw milk were questioned regarding the source

of the milk purchased and their knowledge of other raw milk sources in the community. Several other raw milk producers selling small volumes were identified; none of those ill had consumed milk from these other sources. The relationship between raw milk consumption and illness was significant when confirmed cases were compared to neighborhood controls ($p < .01$), and also when compared to laboratory controls ($p < .01$) using McNemar's matched pair analysis.

A number of milk samples from the dairy, which sold approximately 3,000 gallons of raw milk per week, were analyzed; two yielded Salmonella typhimurium. Rectal swabs from all animals in the dairy, as well as samples of feed, forage, water and swabs from equipment, were negative, with the exception of a baby goat from which Salmonella typhimurium was isolated, and one cow from which Salmonella Group C1 (untyped) was recovered. Two consecutive stool samples from all dairy personnel were negative for Salmonella.

The baby goat arrived at the dairy shortly before the outbreak began, and was being fed raw milk from the dairy. All goats from the herd from which the kid originated were tested and found negative for Salmonella.

A group of 15 children and 3 adults toured the dairy July 2, 1980, and each consumed about 2 ounces of raw milk while there. A number of the tour members petted the baby goat, which was later found to be positive.

Stool samples or rectal swabs were obtained from 13 of the children and one adult in this group. Salmonella Group B were recovered from samples submitted by the adult and four of the children, all of whom were asymptomatic, and from one child who became an outbreak-related confirmed case.

Fourteen isolates, including those from the goat, the milk and a number of patients were serotyped by CDC, and all were found to be Salmonella typhimurium. These 14 isolates, plus all other isolates from other confirmed cases were resistant to ampicillin, carbenicillin, chloramphenicol, kanamycin, and tetracycline.

Two confirmed cases being treated for other medical reasons with antibiotics to which this organism was resistant developed Salmonella gastroenteritis several days following initiation of drug therapy.

One of these patients reported having had gastroenteritis in late June, following raw milk consumption. A second episode of gastroenteritis, during which Salmonella Group B was recovered, followed in late July, several days after drug therapy began. No raw milk had been consumed after the June illness.

The dairy was closed following isolation of Salmonella from milk, and was reopened following inspection of the facility, clinical evaluation of dairy animals, and two sets of negative laboratory results from rectal swabs or stool samples from all animals and dairy personnel.

Only one confirmed case reported consumption of raw milk from the dairy in the month after sales resumed. Daily testing of the milk for 30 days after reopening yielded no Salmonella.

Reported by W. R. DeCou, R.S.; Crystal Day, R.N.; David Feffer, MPH, County Health Officer, Missoula County Health Department; J. Kelly, M.S., Infectious Disease Center, Missoula; G. Mead, Ph.D., Laboratory Director, St. Patrick's Hospital, Missoula; L. Colbo, M.S., Clinical Microbiology Supervisor; B. Desonia, Field Health Officer; M. Skinner, M.D., State Epidemiologist, Montana State Department of Health and Environmental Sciences; J. Glosser, D.V.M., State Veterinarian, Montana State Department of Livestock; Field Services Division, Bureau of Epidemiology, CDC.



SECTION 6

COMMUNICABLE DISEASE MODEL

Evaluation Plan

Introduction

Although communicable disease used to be the major cause of death in the United States, today only one category is ranked among the top ten causes of death (influenza/pneumonia). The economic impact of communicable disease today is the still increasing social costs of morbidity in terms of quality of life, decreased work productivity and increased health care costs. For example, indirect costs for viral hepatitis (1970) have been estimated at:

VIRAL HEPATITIS

| | | | |
|-------------------------------|---|----------------------------------|-----------------------|
| Productivity Losses Due To | Time lost from work for treatment and convalescence | Lost earnings premature death | Total- all sources |
| TABLE 1 | \$114.3 million | \$66.7 million | \$181 million |

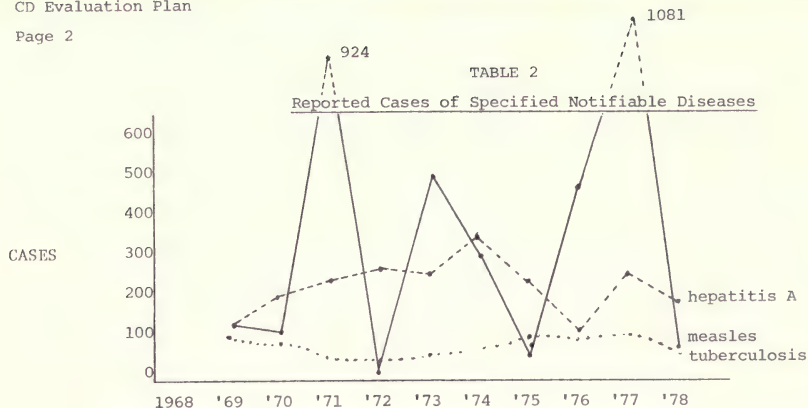
Public Health Reports, July-August 1976.

Health economists have estimated the costs of other communicable diseases at:

- measles - average annual cost of \$125 million
(from the years of 1963-1968)
- tuberculosis - \$724 million (in 1954)
- polio - \$26 million (in 1954)⁴⁰

Nationally there has been a downward trend in the incidence of infectious disease morbidity and mortality. Jumps in incidence of some diseases (notably measles and rubella) continue to appear in the general downward trend. It has been the role of public health, since surveillance of communicable diseases in the U.S. began in 1878, to monitor communicable diseases to deal quickly and effectively with reported outbreaks and to reduce morbidity and mortality.

Montana's incidence of reportable diseases (chart next page) generally is consistent with national trends.



(Source: "1978 Annual Report of Communicable Diseases State Health Department," April 1979, Montana State Health Department.)

The state of Montana has experienced several outbreaks of vaccine-preventable diseases—measles in 1973, 1974 1976–77 and rubella in 1973, 1974 and 1976. The H.E.W.-sponsored Immunization Initiative of 1977–79 is seen by many public health officials in Montana as a good beginning toward solving the problem of repeated childhood disease outbreaks and toward establishing a permanent system to deal with vaccine preventable disease in Montana.

It is generally agreed that the role of public health in dealing with the problem of communicable disease is to:

Prevent and control the incidence and spread of communicable diseases.

Specifically, public health programs are designed to minimize the incidence and/or spread of communicable diseases, educate the public and health professionals, investigate reported cases, reduce the medical complications of communicable diseases, and operate communicable disease programs in an effective and efficient manner.

Public health departments in Montana have long been interested in evaluating their efforts. Their desire for qualitative and quantitative data on which to base their program planning and to allocate resources was formalized with the approval of a two-year research evaluation grant between the State Department of Environmental Sciences and the Missoula City-County Health Department, as contractor for the project. The Missoula Health Department, responsible for developing evaluation models for eight public health programs, will develop and

test evaluation models in Missoula, revise them as necessary, and then distribute "user guides" to local and state health department for their use.

Literature Search

A comprehensive literature search was conducted to review works in the area of evaluation of communicable disease programs in the public health sector. As stated in the Sexually Transmitted Disease literature search, little was found to be of use in direct application. A brief review of generally relevant work follows:

Tolsma, D., Bryan J.
"The Economic Impact of
Viral Hepatitis in the
U.S."

Reviews viral hepatitis morbidity and mortality data to estimate the economic impact of viral hepatitis during 1970. Article points out that the economic impact of the disease, over \$650 million in 1970, contrasts sharply with research on viral hepatitis estimated to have cost \$7 million in 1972. Makes an argument for hepatitis immunization.

Barker, W., Sagerser, J.,
et. al. "Foodborne
Disease Surveillance"

Describes a system where a systematic foodborne disease surveillance system was established in Washington State. The authors demonstrate the capacity of systematic surveillance to recognize and control foodborne disease in a given area. The article also shows the effects of close cooperation among government agencies toward detection and correction of conditions leading to foodborne disease.

Schell, N. "Communicable
Disease Reporting"

Shows establishment of a program for better communication between physicians and health department. A 24-hour automatic phone service and a bi-monthly newsletter to physicians resulted in a 1,000% increase in one quarter of 1977.

Tizes, R. and Pravda, D.
"Proposed Toll-Free Tele-
phone Reporting of
Notifiable Diseases."

Used survey methodology to determine the extent of under-reporting. A method of increasing disease reporting was established and physicians were asked to report communicable diseases by classification -- emergency, serious and other (collective reporting).

Schaffner, W.; Scott H.,
et. al. "Innovative
Communicable Disease
Reporting."

Reports on experimental reporting system using 40 paid community physician consultants and stressing rapid feedback to all area physicians of results of reporting. The system documented the idea of innovation and called for further experimentation.

Witte, J.; Axnick, N.
"The Benefits From 10
Years of Measles Immunization in the U.S."

Data presented reinforces the significance of measles and benefits of preventative measures. Estimates a savings of \$1.3 billion from measles immunization and points out the advantage of administrators using this type of data in decision-making and spending public money.

There does, then, appear to be a scarcity of evaluation data as evidenced by the communicable disease literature search (for complete bibliography, see Appendix A). Contact was made with experts in the field of communicable disease surveillance and comments will be solicited from these people throughout the term of the communicable disease model development and testing.

- Dr. Martin Skinner, Chief, Preventive Health Services Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana.
- Rick Crankshaw, Coordinator, Immunization Program, Montana Department of Health and Environmental Sciences, Helena, Montana.
- Bruce DeSonia, Field Epidemiologist, Montana Department of Health and Environmental Sciences, Missoula, Montana.
- Dr. Richard Hopkins, Denver Health Department, Denver, Colorado.
- Dr. Stephen Thacker, Center for Disease Control, others, Atlanta, Georgia.
- Dr. Fuchashema, Utah State Health Department, Salt Lake City, Utah.

Local Health Department Administrators

Don Pizzini, Health Officer and Cherry Travis, Nursing Director, City-County Health Department, Great Falls, Montana.

Bob Johnson, Health Officer and Shirley McGuire, Nursing Director, Lewis and Clark Health Department, Helena, Montana.

David Feffer, Health Officer, Crystal Day, Nursing Director, Diana Anderson, RN, Mary Taylor, RN, Missoula City-County Health Department, Missoula, Montana.

Bill Burke, Health Officer, Silver Bow Health Department, Butte, Montana.

George Sheckleton, Health Officer, Jan Trembl, Nursing Director, Yellowstone Health Department, Billings, Montana.

Edward King, Health Officer, Jackie Stonnel, Nursing Director, Gallatin City-County Health Department, Bozeman, Montana.

Bruce McIntyre, Health Officer, Audrey Gonzales, Nursing Director, Flat-head City-County Health Department, Kalispell, Montana.

Close communication will be maintained with both local and state health departments as well as with other communicable disease experts. Continued sources of information will be sought throughout the project.

Methods of Procedure

Because of the danger of the uncontrolled spread of communicable diseases and the resultant costs to society, public health has historically given cases of diseases like tuberculosis, hepatitis, measles, and salmonella a high priority in terms of expending resources and staff time.

Communicable disease incidence is highly variable, creating problems for public health agencies as they try to plan how many personnel and the level of resources needed from year to year in order to adequately control and prevent communicable diseases. When communicable disease incidence is plotted (see Table 2, page 2) it becomes evident that any attempts to predict the next outbreak are largely useless. Public health has historically placed a high priority in dealing quickly with communicable disease outbreaks to the exclusion of other programs and activities. When an outbreak is reported and confirmed, all other public health activity is relegated to second place while the immediate health danger of the outbreak is dealt with.

Further compounding the problem of the erratic nature of disease incidence is reporting. With many diseases, public health's ability to effectively control a problem is significantly affected by receiving early warning of an outbreak. Unless public health knows the extent of a disease problem it is also impossible to accurately plan and allocate resources. The Center for Disease Control, in a 1971 survey, estimated reporting rates for six communicable diseases at:

Reporting Rates for Selected Communicable Diseases
Washington, DC January-June 1971

| | <u>CASE/TOTAL</u> | <u>PERCENT</u> |
|--------------------------|-------------------|----------------|
| Viral Hepatitis | 31/282 | 11 |
| H. Influenzae Meningitis | 7/22 | 32 |
| Salmonellosis | 11/26 | 42 |
| Meningococcal Meningitis | 3/6 | 50 |
| Shigellosis | 21/34 | 62 |
| Tuberculosis | 127/200 | 63 |
| Total | 200/570 | 35 |

American Journal of Epidemiology, "The Reporting of Communicable Diseases," 1977.

This research appropriately illustrates the current issue of communicable disease reporting - "What is the true extent of reportable diseases?"

There are currently 55 diseases deemed reportable in Montana.* Because evaluation of total communicable disease surveillance programs of public health is beyond the scope of this evaluation project, five communicable diseases were selected by evaluation model users and other experts.

- Measles
- Tuberculosis
- Salmonellosis
- Giardia
- Hepatitis A (Infectious)

It was widely agreed that these selected diseases are representative of the wide range of communicable diseases in epidemiology and incidence. For purposes of this project, these five diseases will serve as indicators in general for communicable disease.

The Communicable Disease Evaluation Model, which will result from development and testing of the evaluation plan's output, will be easily applied to other communicable diseases as desired.

Estimated program objectives will be used as research objectives. Meeting the objectives then becomes a measure of the program's effectiveness and efficiency. In other words, is the program meeting the over-riding goal of public health which is to:

Prevent and control the incidence and spread of communicable disease.

* According to Regulation 40, State Board of Health.

Objectives by Fiscal Year

(Missoula City-County Health Department)

1. To achieve and maintain a general childhood-immunization level of 90 percent.
2. To establish and maintain communicable disease staff protocols to insure consistent and accurate communicable disease surveillance, response and prevention.
3. To maintain a reporting system whereby cases of specific communicable diseases are reported to the health department within established time limits from diagnosis/confirmation.
4. To establish and maintain a data system detailing health department costs of providing communicable disease surveillance and prevention.

Communicable Disease Evaluation - Description

The communicable disease evaluation plan will be designed to produce data on the five diseases mentioned previously - measles, hepatitis A, salmonellosis, giardia, and tuberculosis. The data systems will be designed to be easily replicable for use on other diseases, as well.

The communicable disease evaluation is designed to be used in:

- (1) providing a base for planning and administrative decision-making,
- (2) evaluating communicable disease programs for effectiveness and efficiency.

Evaluation descriptions for each of the seven research objectives will follow the same format: (1) rationale for the established objective will be discussed, (2) methodology will be detailed and explained, and (3) use of data will be given.

Objective 1. To achieve and maintain a general childhood-immunization level of 90 percent.

Rationale - The statewide Immunization Initiative established a 90 percent immunization goal. The concerted effort to reach that goal resulted in approximately a __ percent statewide immunization level (86% in Missoula County). Long-range goals set by the HEW call for institutionalizing the Immunization Initiative so that its gains are not lost. In addition, the recently-enacted school entry and measles quarantine laws should help to uphold established immunization levels.

Establishing a 90 percent objective sets a measurable target so that meeting (or not meeting) the objective then becomes a gauge of success. The levels to be measured will fit the State Health Department's minimum requirements

*changed -
see pg. i*

(see Appendix B) for school children for polio, DPT, measles and rubella.

Methodology - A "Two-Year-Old Immunization Survey", conducted each year by the State Health Department to track immunization levels of two to two and one-half year old children, is considered to reflect preschool immunization levels.

TWO YEAR IMMUNIZATION SURVEY
(Montana)

| | 1974 ¹ | 1975 ² | 1976 ³ | 1977 ⁴ | 1978 ⁵ |
|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Polio (3 + doses) | 70% | 73% | 78% | 88% | 88% |
| DPT (3 + doses) | 78% | 83% | 86% | 94% | 94% |
| Measles | 81% | 80% | 83% | 92% | 90% |
| Rubella | 79% | 75% | 78% | 90% | 89% |

Born In:

¹January - December 1972

²January - June 1973

³January - June 1974

⁴January - June 1975

⁵January - June 1976

This yearly figure can be easily used to compare trends from year to year.

In addition, the State Health Department will receive reports from schools (grades K - 12) in compliance with the new law requiring immunizations for school entry. The results will be available yearly and can be used in tandem with the "Two-Year-Old Immunization Survey" to measure attainment of the objective.

Should immunization levels fall below 90 percent, the health department then will have information to be able to take steps to bring levels up thru use of increased public relations, special immunization clinics and/or establishing a county-wide immunization task force.

Use of Data - Since communicable disease takes a good deal of public health resources, it is felt that a long-term measure is necessary in order to track effectiveness of control efforts. The two measures described are currently available and easily compiled, although attention must be given to any changes in methodology by the State. Should the immunization level show a consistent falling off, then administrators will have the opportunity to plan remedial measures well in advance.

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Objective 2. To establish and maintain communicable disease staff protocols to insure consistent and accurate communicable disease surveillance response, and prevention.

Rationale - The terms "consistent" and "accurate" for the purposes of this plan mean that each patient who is followed receives the same high quality of care. In other words, every patient who is in contact with the communicable disease program will receive quality care equal to care given all other patients and every communicable disease outbreak will receive equal (quality) investigation.

A formal communicable disease protocol can be used not only in day-to-day contacts, but also as a training tool. As noted early in this Evaluation Plan, five communicable diseases will be covered by protocol - measles, hepatitis A, salmonellosis, giardia, and tuberculosis.

Methodology - General communicable disease protocols will be drawn up for each of the five diseases covered. Each disease will be treated differently, depending on its epidemiology and circumstances, and will include which staff member is responsible, what procedures are to be followed and how evaluation records are to be kept.

For each major (five cases or more) outbreak, a separate file folder will be maintained and all pertinent data will be kept in that file. A formal quality review, used on a quarterly basis to evaluate speed, accuracy, effectiveness and outcome of department response, will be conducted by a committee of nurses and administrators. A short written report will follow committee action to be presented to nursing administrators.

Cost data will be designed to give program managers costs per outbreak thru institution of the "outbreak folder" which contains all pertinent data on a disease as well as a time record so that personnel time and other costs may be documented.

Use of Data - Use of formalized procedures will insure consistent processing of patients, outbreaks and investigative work. The quality review of selected cases/outbreaks will insure department communication and give managers a way to keep track of disease procedures and outcomes of public health intervention. Cost data will allow administrators to better plan resource allocation and to continually track current expenditures of staff time.

Objective 3. To maintain a reporting system whereby cases of specific communicable disease are reported to the health department within established time limits from diagnosis/confirmation.

Rationale - Not knowing the extent of the communicable disease problem has resulted in public health departments not knowing whether they have made an impact and not being able to allocate resources based on the extent of disease incidence. In addition, a study by the National Opinion Research Center (1966) showed that physicians did not notify the health department of disease incidence because significant numbers of physicians were unaware of the legal requirements for reporting (34 percent were unaware of reporting requirements for measles, for example). Physicians were also concerned about confidentiality and had a feeling that their reporting of some diseases was useless. ¹⁷

Another study (Cleere, R. L., et al. 1976) showed that completeness of reporting was directly related to the confidence expressed by physicians in their health departments. This finding was cited by Schaffner, Scott and others in their work in exploring the effects of improving relationships between doctors and health departments.

Objective three was chosen to be conducted jointly with the sexually transmitted disease evaluation plan's Objective 5 ("To maintain a reporting system whereby cases of gonorrhea are reported to the health department within 48 hours of confirmation.") This way, a comprehensive reporting methodology can be conducted.

Methodology - Because of lack of success with passive reporting systems, three variations of an active system will be tested for effectiveness. It is felt that passive systems, or waiting for physicians and labs to report on their own, have compounded the puzzle of not knowing the true scope of communicable disease incidence. Active reporting, or actively contacting the medical community, is seen as a far better way to maintain a grasp of true disease incidence.

There are three options that will be tested as to their effectiveness. The first step for all three will be to interview several physicians, labs and hospital infectious disease personnel about reporting to get their input. Then all reporting sources will be divided into four groups for experimental purposes.

changed -
see pg. ii

The reporting research will be directed toward physicians' receptionists/nurses who would be responsible for the actual reporting. The argument has been made that physicians are much too busy to stop and call in reports, but their staff, who file away patient records, would be a more logical reporting participant.

- Group I - Physician receptionist will be called by health department communicable disease reporter each Friday afternoon to ask for reportable diseases. A "Disease Incidence Form" will be drawn up for health department personnel use.
- Group II - Physician receptionist will receive a "Disease Incidence Form" from health department communicable disease reporter by Friday of each week with instructions to mail it back by Tuesday.
- Group III - Physician receptionist will receive a pad of "Disease Incidence Forms" to keep on hand. By Friday, they will receive a post-card reminder from the health department to fill out the form and return it by Tuesday.
- Group IV - Will serve as control group. No active or additional contact will be made.

CHANGED - See Page 11.

There will be different levels of staff time and costs used for each of the three methodologies. A cost analysis will be drawn up for each, so that the final decision of which method is most effective will be also cost-effective. Disease incidence will be tabulated and reported to physicians, labs and the community.

Use of Data - An accurate and consistent reporting system will yield current disease outbreak information to not only public health, but also to area physicians. This will meet legal requirements as well as give administrators an accurate measure of communicable disease incidence in the county so that they may plan resource allocation and staffing patterns.

Objective 4. To establish and maintain a data system detailing health department costs of providing communicable disease surveillance and prevention.

Rationale - The most frequently mentioned data need is cost. Administrators have placed a high priority on receiving carefully formulated cost figures on what it costs the health department to provide immunizations, prevention and follow-up services to the community.

Methodology - A data system is defined for purposes of this project as a means of setting up clearly defined measurements of costs in such a way that all forms and methodologies are easily replicated from year to year in a time series.

Evaluation of communicable disease control activities will be split into two parts: (1) health department cost, and (2) cost-benefit data for each of the five selected diseases.

Full definitions of services and methodology will be included. For example:

| MEASLES COST WORKSHEET (clinic) | | | Cost |
|------------------------------------|---|---|-------|
| Per Immunization | ((total personnel time + fringe) x number of immunizations given) | | |
| _____ | + _____ x _____ | = | _____ |
| | x overhead | = | _____ |
| | + supplies/equipment | = | _____ |
| | Subtotal | = | _____ |
| | + other | = | _____ |
| | Total Cost | = | _____ |

In addition, national figures on cost/benefit ratios will be provided in order to give Montana health departments an idea of what kinds of benefits they are receiving from their expenditures.

Use of Data - Current and accurate cost data will always be needed by administrators who are faced with discrepancies between the demand for public health activities and quantities of money and staff to conduct those activities. Knowing the cost differences of different activities and the levels of time and dollars being used is a powerful tool for resource allocation.

dropped
see pg. ii

Implications of Communicable Disease Model

As stated earlier, the Communicable Disease Model will be generalizable to fit other health department needs and other communicable diseases. The methodologies described in this evaluation plan are concise and designed to result in immediately useful data, whether users refer to Missoula results or construct their own cost data, reporting system or procedures.

Publication of the methodology and results of the communicable disease evaluation model must be considered. The literature search turned up little of direct use, indicating a dearth of information on measuring the effectiveness and efficiency of public health programs nation-wide.

Janice S. Hand

January, 1980

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MONTANA STATE HEALTH DEPARTMENT

Minimum Immunization Requirements

| <u>GRADE</u> | <u>AGE</u> | | | | |
|--------------|------------|------------------|---------|-----------|-----------------|
| K-1 | 5-6 | 4 DTP*, DT* | 3 polio | 1 measles | 1 rubella |
| 2-6 | 7-12 | 4 DTP*, DT or Td | 3 polio | 1 measles | 1 rubella |
| 7-8 | 13-14 | 4 DTP*, DT or Td | 3 polio | 1 measles | not required ** |
| 9-12 | 15-18 | 4 DTP*, DT or Td | 3 polio | 1 measles | not required ** |

*one immunization after the fourth birthday or
three immunizations if given after school entry

**not required for girls older than 12

COMMUNICABLE DISEASE EVALUATION SUMMARY

| Instrument | Measures | Procedure | Obj. |
|---------------------------------------|--|---|------|
| Two-Year-Old Immunization Survey | immunization status of two to two and one half year olds per county and state | use State conducted survey | 1 |
| School Reports | number of schoolchildren up-to-date on legally required immunizations as required by law | report from school as sent to State Health Department | 1 |
| Measles Protocol | efficiency and effectiveness of health department's actions on clinic procedures and outbreaks | quality assurance review conducted by nursing staff | 2 |
| Hepatitis A Protocol | " | " | 2 |
| Tuberculosis Protocol | " | " | 2 |
| Salmonella Protocol | efficiency and effectiveness of health department's actions for outbreaks | quality assurance review conducted by nursing and sanitation staff jointly | 2 |
| Giardiasis Protocol | " | " | 2 |
| CD Cost Worksheet and Outbreak Report | speed, accuracy and outcome of health department response to outbreak -- cost of same | separate folder on each outbreak and written report to nursing/sanitation administration as well as cost per outbreak | 2 |
| Reporting System Test | most effective way to insure CD reporting for five diseases listed | test of methods - phone call, post card, letter. | 3 |

CD Evaluation Summary - cont. -

| | | | |
|--------------------------|---|--|---|
| Cost Worksheet | cost to health department of providing services for each of the five diseases | record or time materials and equipment use | 4 |
| Cost/Benefit Analysis | relationship of input to outcome | CDC methodology | 4 |

USERS' GUIDE

FOR

SEXUALLY TRANSMITTED DISEASE
PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J.S. Hand) under Contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE

Sexually Transmitted Disease Program Evaluation

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INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates seven ways to evaluate your Gonorrhea Program — from a patient opinion and knowledge survey to a program cost analysis. The evaluation methodologies are a result of the two-year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The evaluation project's goal is to provide practical, efficient evaluation methods that public health administrators can use when evaluating their own programs.

Scope of Sexually Transmitted Disease (STD) Program - Because gonorrhea is by far the most common of the 13 sexually transmitted diseases¹, this evaluation is specific to gonorrhea. Each evaluation methodology can easily be modified to cover other diseases.

Each evaluation methodology is designed to smoothly fit into your health department's existing programs and to produce clear and immediately useful data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's programs and data. You may need to modify some parts of the evaluation to fit your programs' features, or expand the evaluation to other disease programs.

Each section of the Guide shows Missoula's test results, discusses evaluation procedures, reviews evaluation models, and provides any forms used to collect data. Program cost analysis worksheets, sexually transmitted disease reporting forms and other documents are copy-ready.

Changes from Original Evaluation Plan - An evaluation plan is simply a brief outline of proposed work. When parts of the Sexually Transmitted Disease Evaluation Plan proved infeasible, they were dropped and other parts were revised:

1. Evaluation Objective 1, Patient Interviews — We decided not to interview patients to see if gonorrhea protocols had been followed because of potential violation of patient confidentiality.
2. Evaluation Objective 3, Contact Cost Worksheet — There was no significant difference between the cost of contacts who were located and those not located. The contact cost analysis was simplified from original plans.

¹ Candidiasis, chancroid, condyloma acuminatum, donovanosis, gonorrhea, herpes, lymphogranuloma venereum, molluscum contagiosum, nonspecific urethritis, pediculosis, scabies, syphilis, and trichomoniasis.

3. Evaluation Objective 4, Repeater Risk Score — We feel the risk score is impractical since its results would be open to debate. Studies have shown that repeaters are at risk for STD because of their sexual activity. If repeaters know they should be examined and know where to go for treatment, their STD education has been effective, not ineffective.
4. Evaluation Objective 5, Test of Three Reporting Options — Changed to one reporting system which incorporates telephone, mail, and computer reports from three different groups of physicians. (For a complete description, see Communicable Disease Users' Guide, Section 1.)
5. Evaluation Objective 6, Control Groups — The Missoula Health Department does not offer school nursing services, which include STD information presentations to classes.

SECTION 1

GONORRHEA PROTOCOL STAFF PROCEDURES TO INSURE CONSISTENT AND ACCURATE SERVICES

Results - The Gonorrhea Protocol replaced a general outline in Missoula's Outpatient Care Center. Clinic and field nurses followed the new protocol to thoroughly test it and be sure the protocol covered all steps of patient interviews, examination, and treatment. After the protocol was finalized, Outpatient nurses reviewed twelve patients' visits to see if their care followed the protocol. Their evaluation showed that staff did closely follow the Gonorrhea Protocol.

Discussion - Protocols are one clear way to insure program quality and consistency. They are also an excellent staff training tool. The Gonorrhea Protocol was designed to be used by any health department, although it may need changes to fit your program's policies.

Methodology - To get the most use from protocols, they should be updated at least yearly, after they are tested and finalized. To keep protocols current, add addenda and corrections promptly.

Evaluating the use of the gonorrhea protocol is difficult. Missoula's technique was to have the Outpatient nurses (who routinely use the protocol) review 12 patients' visits by checking the protocol steps they followed. Other methods of evaluation could be:

1. Peer Review - another member of the outpatient staff interviews her/his coworker and asks if each protocol step was followed and, if not, why.
2. Outside Review - an independent member of the nursing staff listens to the patient interview and records protocol steps that were followed.
3. Patient Interviews - another nurse interviews the patient and asks whether certain protocol steps were followed.

Each evaluation method has distinct problems, whether confidentiality, staff relations, or bias introduced if staff act differently when they know they are being evaluated. Self-review worked best for the Missoula Health Department, but you may prefer another method.

OUTPATIENT CARE CENTER
GONORRHEA PROTOCOL
Missoula City-County Health Department

This manual is intended to serve as a step-by-step procedure for nurses to follow in prescribing and treating gonorrhea patients. It is not intended as a training tool, but rather as a guide for trained RNs. A case is defined as a laboratory confirmed diagnosis.

FEMALE PATIENTS

I. Initial Visit

- A. introduce yourself
- B. assure client of confidentiality
- C. fill out VDRL form (sample page 9)
- D. fill out STD Report form completely (sample page 10)
 1. be sure to date and fill in all applicable blanks
 2. ask specifically if client has had any unusual
 - a. discharge
 - b. lower back pain
 - c. lower abdominal pain
 - d. spotting between periods
 3. if client is contact of positive gonorrhea case and has acute PID symptoms, then refer to private physician for treatment, especially if client has IUD
- E. draw blood for VDRL (a routine screen for syphilis - to be done on all pts.)
 1. write patient name on vacutainer
 2. take vacutainer to lab and let blood sit for at least 2 hours before centrifuging
- F. conduct exam - explain all procedures to patient thoroughly
 1. ask patient to remove clothing from waist down and provide with drape
 2. place clean slides and culture plates on table
 3. put 2-3 drops saline on 1 clean slide (be sure frosted side of slide faces up)
 4. position patient on examining table
 5. examine external genitalia for sores, warts and unusual discharge
 6. with forefinger in bottom of vaginal opening, insert warmed speculum (do not use lubricant other than water because of possibility of adverse effects on culture)

CONSENT AND CARE CLINIC

CONCURRENCE PROTOCOL

This protocol is intended to serve as a step-by-step procedure to be followed in examining and treating gonorrhea patients. It is not intended as a training tool, but rather as a guide for the clinician. A case is defined as a laboratory confirmed diagnosis.

FEMALE PATIENTS

I. Initial Visit

- A. Introduce yourself
- B. Assure client of confidentiality
- C. Fill out VDRL form (sample page 9)
- D. Fill out STD Report form completely (sample page 10)
 1. Be sure to date and fill in all applicable blanks
 2. Ask specifically if client has had any unusual
 - a. discharge
 - b. lower back pain
 - c. lower abdominal pain
 - d. spotting between periods
 - e. pain with intercourse
 3. If client is contact of positive gonorrhea case and has acute FI symptoms, then refer to private physician for treatment, especially if client has IUD.
- E. Draw blood for VDRL (a routine screen for syphilis - to be done on all patients)
 1. Write patient name on vacutainer
 2. Take vacutainer to lab and let blood sit for at least 30 minutes before centrifuging
- F. Conduct exam thoroughly - explain all procedures to patient
 1. Ask patient to remove clothing from waist down and provide with drape
 2. Place clean slides and culture plates on table.
 3. Put 2-3 drops sterile saline on one clean slide (be sure frosted side of slide faces up)
 4. Position patient on examining table
 5. Examine external genitalia for sores, warts and unusual discharge
 6. With forefinger in bottom of vaginal opening, insert warmed speculum (do not use lubricant other than water because of possibility of adverse effects on culture).
 7. Locate end of cervix and position speculum
 8. If large amount of white or yellow discharge, clean cervix with swab
 9. Take culture
 - a. Use first sterile swab to collect vaginal discharge and stir into saline on slide 1
 - b. Use sterile swab to collect discharge and/or secretions from cervical os after removing excess vaginal discharge - swab should remain in os for 15-30 seconds and be rotated gently to collect bacteria
 - c. Roll swab on slide 2. Do gram stains only if purulent discharge or highly suspicious of gc
 - d. Gently roll on blood agar plate (if discharge is minimal, use third swab to collect more discharge from os and dab or roll slide) - label culture
 - e. Remove speculum gently
- G. If patient indicates oral, genital and/or anal intercourse
 1. Pharyngeal culture
 - a. Explain procedure to patient
 - b. Apply sterile swab vigorously to posterior pharynx and tonsillar crypts - swab should remain contacting throat for 15-30 seconds
 - c. Roll swab on culture plate gently, using isolation technique, label and place in incubator for two days.

2. Wet culture
 - a. Expl. in pre-labeled container
 - b. Insert swab into bag and push into anal canal.
 - c. Move swab from left to right in anal to sample crypts allowing 15-30 seconds for organisms to be absorbed onto swab
 - d. Roll swab on culture plate using isolation technique and place in incubator for two full days
4. Diminual pelvic examination and palpation of lower abdomen to discern cervical motion/tenderness (adnexes) and to check for pelvic masses. If patient indicates contact with diagnosed chlamydia case, verify case, and treat according to CDC recommendations and Health Department policies. (Refer pregnant women suspicion of HIV or allergic to penicillin to own physician.) Discuss observations with patient, providing pertinent reading materials to further answer questions.
- I. Ask patient to dress and wait in the clinic room for slide results - ask her to read literature
- J. Have lab read and/or confirm gram stain results
 1. Gram stain cervical slide as follows:
 - a. Air dry slide for several minutes (optional - flame slide by quickly passing slide over bunsen burner flame 3-4 times, discharge side up)
 - b. Cover surface of slide with crystal violet; let stand 5-10 seconds, then remove with a gentle stream of water
 - c. Cover surface of slide with farn's iodine; let stand for 60 seconds, then remove with gentle stream of water.
 - d. Decolorize with acetone-alcohol for 5-10 seconds or until no more purple color is removed from smear; rinse slide again in gentle stream of water
 - e. Cover slide with safranin for 5-10 seconds; rinse with water and let dry on paper towel
 2. Examine slide for gonococci as follows:
 - a. Add one drop of immersion oil to slide (even smear)
 - b. Focus on discharge first with low power (small objective with green rings)
 - c. Swing high powered objective (red rings) into place and focus on discharge, using the fine focus knob, turning carefully to avoid crushing the objective against the slide
 - d. Look for gram-negative (red-colored), intracellular diplococci.
- K. Gram stain results
 1. If results are negative, instruct patient to call health department in two days for culture results and avoid sexual contact until results are known
 2. If results are positive or if patient was in contact with a known gonorrhea case, treat for GC and make specific appointment for test-of-cure; conduct contact interview.
 3. If slide is positive for yeast, treat with monovera cream. If positive for trichomonas, treat with flagyl; if positive for non-specific vaginitis, treat with ampicillin or flagyl (see protocol for vaginal infections)
 4. Appearance of culture positive for gonorrhea:
 - a. Grams - purple (small round grey intracellular cocci), non-haeretic, non-spreading
 - b. Gram stain - gram-negative (red) diplococci

11. Vaginal Infections - Standing for use: These are available for A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

A. Yeast Infections

1. Vaginal yeast infections are usually diagnosed with a wet slide. The procedure is as follows:
 - a. Examine a fresh saline preparation under low power (green-ringed objective), noting numbers of pus cells and epithelial cells (usually you will not see large number of pus cells with a yeast infection)
 - b. Swing in high dry objective (yellow-ringed objective), examining, looking at the kinds of bacteria present (ordinarily yeast and lactobacteria will co-exist)
 - c. Swing in low power objective again, add 1-2 drops 10% KOH and stir prep with wooden applicator stick, focus with low power, then swing in high dry objective
 - d. Most epithelial cells and pus cells will "swell up," leaving large spheres; bacteria and yeast, if present, will be unaffected and will stand out
 - e. Yeast will appear oval in shape, are much larger than most bacteria, may have small round "buds" attached or in chain; yeast infections, may have long "tubes" extending from yeast cell

2. Treatment

- Monistat 7 vaginal cream (miconazole nitrate 2%). Use according to intra-vaginally once daily at bedtime until tube is completely used up (7 days). Give patient information and instruction handout.
- a. Adverse Reactions: Vulvovaginal bleeding, itching and irritation of vagina
 - b. Precautions: If used in the first trimester or pregnancy, physician's approval is necessary
 - c. Contraindications: Known hypersensitivity to miconazole

B. Trichomonas

1. Trichomonas infections are diagnosed with a wet slide; the procedure is as follows:
 - a. Examine a fresh saline preparation under low power (green-ringed objective), noting numbers of pus cells and epithelial cells (as a general rule, many pus cells are seen with trichomonas infections)
 - b. Look for "roundish" cells which might be moving in circles or appearing to spin in place
 - c. Swing in high dry (yellow-ringed objective) and examine for "moving" cells; look for one or more cells with flagella which would be propelling the organism through the saline

2. Treatment

- Flagyl - 8 tablets 250 mg each and (total 2000 mg). Patient should take 6 tablets in 3 days (see patient information and instruction handout).
- a. Adverse Reactions: Bloating, indigestion, diarrhea, nausea and dryness of mouth. Dizziness and numbness have also been reported. Known to cause cancer in laboratory animals
 - b. Precautions: Do not drink alcohol, grapefruit juice, and other beverages should not be consumed for 72 hours after last dose. Severe abdominal cramps, hypotension, vertigo, and ataxia have been reported
 - c. Contraindications: Pregnancy, alcoholism, and patients in the first trimester of pregnancy and prior to conception

C. Non-specific Vaginitis

1. Diagnosis

Clue cells on saline preparation; amine ("fishy") odor on addition of KOH. Absence of fungal elements and trichomonads.

2. Treatment

Treat with Ampicillin 500 mg qid x 7 days. If allergic to Penicillin give Flagyl 250 mg tid x 7 days. If Ampicillin does not relieve symptoms give Flagyl 250 qid x 7 days. If all these attempts have failed, have patient see own doctor. With any of the above medications, if the patient is still symptomatic after treatment at the clinic she should be referred to Planned Parenthood or her private physician for further care.

D. Venereal Warts

Apply 20% podophyllin solution to external warts only. Internal or cervical warts must be referred to private physician. After five (5) treatments (one week between each treatment) if wart isn't gone refer to private physician. Give venereal wart instruction and information sheet.

STANDARD

- I. Initial Visit
 - A. Introduce yourself
 - B. Assure patient of confidentiality
 - C. Fill out VDRL form (sample page 5)
 - D. Fill out STD Report Form completely (sample page 6)
 - E. Draw blood for VDRL (a routine screen for syphilis for all STD patients)
 1. Write patient name on vacutainer
 2. Take vacutainer to lab and let blood sit for at least 30 minutes before centrifuging
 - F. Physical Examination
 1. Inspect skin of genitals, inguinal areas, thighs, lower abdomen, hands, palms, and forearms
 2. Inspect pubic hair for lice and nits
 3. Inspect penis, retract foreskin, inspect meatus and "milk" urethra for discharge
 4. Palpate scrotal contents
 5. Palpate for inguinal and femoral lymphadenopathy
 - G. If patient having discharge, dysuria, possible STD contact do gram stain: explain possibility of having NGU
 1. Explain procedure to patient
 - a. "Milk" urethra for discharge
 - b. Use swab to collect from urethra and roll swab across slide. then roll across labeled culture plate
 - c. Gram stain slide - Incubate culture plate for two days
 - H. If patient does not have discharge
 1. Explain procedure
 2. Insert calgiswab 1/4 to 1/2" into meatus and swirl swab for 30 seconds
 3. Roll swab across labeled culture plate
 4. Incubate culture plate for two days
 - I. If patient indicates rectal intercourse
 1. Explain procedure
 2. Insert swab approximately one inch into anal canal
 3. Move swab from side to side to sample crypts, allowing 10-20 seconds for absorption of organisms onto swabs
 4. Streak labeled culture plate using isolation technique
 5. Incubate for two days
 - J. If oral-genital intercourse
 1. Explain procedure
 2. Swab vigorously posterior pharynx and tonsillar spaces for 10-20 seconds
 3. Streak labeled culture plate using isolation technique
 4. Incubate for two days
 - K. If patient has positive gram stain and contact (if patient is female, case, treat)
 - L. If gram stain negative for gonorrhea, but patient has purulent urethral discharge and dysuria, treat for nongonococcal urethritis
- II. Contact Interview (See page 1-2)

CONTACT INTERVIEW

1. Interview the patient for the past 30 days prior to appointment, with the exception of those who are professional fishermen.
2. If the patient has a history of sex, to last menstrual period.

1. Completely fill out "Contact Interview" section of STD Report Form.
2. Ask number of different partners.
3. Explain that you need each partner's name and/or description so that you will know that they have been examined and treated if necessary.
4. Give patient a chance to refer contacts to treatment at health department, doctor, Planned Parenthood or U of M Health Service.
5. Have patient list most recent exposure first and work back for 30 days (male) or onset of next-to-last menstrual period (female); list names first, then go back later for descriptions, address, etc.
6. Let patient know that any contacts he/she does not want to locate, the health department will--for these contacts get complete descriptions:
 1. physical description, age
 2. employment/school
 3. living conditions/location/friends
 4. residence in Missoula/recent travel
 5. hangouts, etc.
 6. dates of exposure
7. Make specific appointment for test-of-cure and advise patient that if he/she is a no-show, a field visit will be made and contacts will need to be followed up immediately, because they deserve the same opportunity for treatment as the patient.

TEST-OF-CURE INTERVIEW

- I. If patient does not return within ten days, attempt to locate by phone; if unable to locate with three phone calls, notify field epidemiologist using Epidemiologic Report Form (enclose page 1).
- II. If patient does return for appointment or within ten days, then
 - A. Check with patient to insure that all contacts have been notified and examined. Also verify with communicable disease STD procedure.
 - B. Completely fill out bottom half of page 2 of Test-of-Cure form -- "recheck visit" section.
 - C. Culture patient at appropriate site using procedure as discussed.
 1. Advise patient to return to clinic at any time that he/she feels reinfection has occurred (statistics show that 14% of gonorrhea are reinfected within six weeks).
 2. If patient remains positive, then first check for reinfection
 - a. if patient has been reinfected, re-treat, stressing sexual abstinence
 - b. If patient has not been reinfected, (if reinfection is ruled out); treat with *spectinomycin hydrochloride*, 2 gm IM *once* *infection* while patient is in clinic. Important to follow-up contacts vigorously to halt possible spread of penicillin failures. Cultures should be tested for beta-lactamase production
 3. If patient is negative, make sure that all contacts have been examined and treated if necessary
 - D. In addition, on all women patients do rectal cultures for test-of-cure
- III. Test-of-Cure Interview
 - A. Review list of patient's contacts to see who has been examined and where; verify while patient is in office
 - B. Follow-up any non-referred contacts (either clinic nurse or state field epidemiologist through use of Epidemiology Report) with information from patient
 - C. If patient is positive at test-of-cure, interview carefully to rule out reinfection or to determine source

I. Uncomplicated Genital

- a. If patient is not allergic to penicillin, use *penicillin G benzathine* 1.2 million units intramuscularly (i.m.) in two gluteal muscle sites. Inform patient of "instructions for care" (page 10) and "adverse effects of medication". Have patient wait for 15 minutes in waiting room in case of adverse effects of medication.
- b. If patient is allergic to penicillin, pretreat with *hydrocortisone* 100 mg. If patient has hepatic involvement, history of hemolytic anemia, or glucose 6 phosphate dehydrogenase (G-6 PD) deficiency, has had a renal impairment or is of black race, use *tetracycline* 500 mg. q.i.d. for 7 days. Explain to patient the need for caution for tetracycline (page 10). Advise patient of "instructions for care" (page 10).
- c. Make appointment for patient 4-7 days after completion of therapy; follow-up any patients not keeping test-of-cure appointment.

II. Pharyngeal Infections

- a. If patient is not allergic to penicillin use *penicillin V potassium* 250 mg. q.i.d. for 10 days. Advise patient of "instructions for care" (page 10) and "adverse effects of medication". Have patient wait for 15 minutes in the waiting room in case of adverse effects of medication.
- b. If patient is allergic to penicillin use *tetracycline* 500 mg. q.i.d. for 7 days. Advise patient of "instructions for care" (page 10) and "adverse effects of medication". If patient is allergic to probenecid or sulfonamides, has a history of hemolytic anemia due to glucose 6 phosphate dehydrogenase (G-6 PD) deficiency or has known renal impairment or is of black race, use *tetracycline* 500 mg. q.i.d. for 10 days. Advise patient of "instructions for care" (page 10) and "adverse effects of medication". Have patient wait for 15 minutes in waiting room in case of adverse effects of medication.
- c. If patient has been treated for anogenital gonorrhea and is later found to have pharyngeal infection, treat with *erythromycin* 500 mg. q.i.d. for 10 days. Advise patient of "instructions for care" (page 10) and "adverse effects of medication". Have patient wait 15 minutes in case of adverse effects of medication.

III. Non-Gonococcal Urethritis (NGU/NSU)

- a. If patient is not allergic to tetracycline, give *tetracycline* 500 mg. q.i.d. for 7 days. Advise patient of "instructions for care" (page 10) and "adverse effects of medication". Explain to patient the need for caution for tetracycline.
- b. If tetracycline is contraindicated give *erythromycin* 500 mg. q.i.d. for 7 days.
- c. If patient has steady sex partner refer in for test and treatment.
- d. Ask patient to call health department after treatment is completed; if at that time discharge continues, refer to private physician; if patient denies discharge, close chart.

IV. Other

- a. Acute salpingitis (pelvic inflammatory disease) refer to gynecologist for follow-up within one week and refer for follow-up if gonorrhea is present to state field representative immediately.
- b. Acute serous cystitis (acute prostatitis) refer to urologist for follow-up within one week and refer for follow-up if gonorrhea is present to state field representative immediately.
- c. Acute epididymitis (acute epididymitis) refer to urologist for follow-up within one week and refer for follow-up if gonorrhea is present to state field representative immediately.

VEDS. No. 1. (1941, 1942)

INTERVIEW OF MR. W. L. B. (1941)

Page 1. (1941, 1942)

Routine....., Premarital....., Married Case....., V.....

Other..... Name (initial).....

Age....., Sex....., Race: W L B

Name:.....

Last

First

Middle

Local Address:.....

.....

Received date:..... Reported date:

Qual. VEDS. Slide: REACTIVE..... WYNN REACTIVE..... VEDS. Slide:

Quant. VEDS. Slide: Titer in dils.....

Darkfield Microscopy:

SEXUALLY TRANSMITTED DISEASE REPORT
Missoula City-County Health Department

Date: _____ Interviewer: _____

Pt's Full Name: _____

Local Address: _____ Phone: _____

Age: _____ Sex: m f Race: w b o Marital Status: s m o y

Employment: ☐ full-time ☐ part-time ☐ unempl. ☐ homemaker ☐ student

Employer/School: _____ Phone: _____

Drug Allergies: ☐ penicillin ☐ sulfa drugs ☐ tetracycline ☐ others: _____

Date Onset of Symptoms: _____ Type: _____

Date Last Sexual Contact: _____ Type: ☐ genital ☐ oral ☐ rectal

Have you been taking any antibiotics in the last 30 days? ☐ yes ☐ no ☐ don't know

Have you ever had any type of VD before? ☐ yes ☐ no ☐ don't know

☐ yes → What type? _____ When? _____ Where treated? _____

☐ no

☐ don't know

Previous (within 30 days)/ present treatment: date _____ reason: _____

| MICRO EX. | Urethra | Cervix | Other: |
|-----------------------|--------------------------------|--------------------------------|--------|
| Date Collected: _____ | <input type="checkbox"/> pos. | <input type="checkbox"/> pos. | _____ |
| | <input type="checkbox"/> neg. | <input type="checkbox"/> neg. | _____ |
| | <input type="checkbox"/> susp. | <input type="checkbox"/> susp. | _____ |

| CULTURE EX. | Urethra | Cervix | Anus | Pharynx | Throat |
|-----------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Date Collected: _____ | <input type="checkbox"/> pos. | <input type="checkbox"/> pos. | <input type="checkbox"/> pos. | <input type="checkbox"/> pos. | <input type="checkbox"/> pos. |
| | <input type="checkbox"/> neg. | <input type="checkbox"/> neg. | <input type="checkbox"/> neg. | <input type="checkbox"/> neg. | <input type="checkbox"/> neg. |

DATE: _____ Results: _____ Source: _____

TESTING: Date Collected: _____ VDR: Qual. & Quant. _____
SRL: Quant. _____

Signature: _____ Date: _____

Printed: _____

CONTACT INTERVIEW

| Encounter Date | Name/Address/Description | No. Located | LOCATED | | | | | |
|-------------------|--------------------------|----------------|---------|-----|-------|-------|----|----|
| | | | ED | Gen | Other | Dist. | Ex | Lo |
| | | | | | | | + | |
| | | | | | | | + | |
| | | | | | | | + | |
| | | | | | | | + | |
| | | | | | | | + | |

Notes:

STD REPORT — RE-CHECK VISIT

Date: _____

Interviewer: _____

Intercourse Since Last Visit: ☐ yes ☐ no

Contacts: _____

Type of Contact: ☐ genital ☐ rectal ☐ oral

Symptoms: ☐ absent ☐ persistent Type: _____

MICRO EX.

Date Collected: _____

Urethra

☐ pos.

☐ neg.

☐ susp.

Cervix

☐ pos.

☐ neg.

☐ susp.

CULTURE EX.

Urethra

date

☐ pos.

☐ neg.

Cervix

date

☐ pos.

☐ neg.

Anus

date

☐ pos.

☐ neg.

Pharynx

date

☐ pos.

☐ neg.

Urine

date

☐ pos.

☐ neg.

DO NOT TAKE ANY MEDICINES TAKING TETRACYCLINE

1. DO NOT take medications with dairy products — milk, cheese, etc.
2. DO NOT take medication 1 hour before meals or 2 hours after meals.
3. DO NOT take medication if you are pregnant.
4. DO NOT have sex until the return visit to the clinic (test-negative) or you may become re-infected or infect someone else.
5. It is very important to finish ALL medication that you were given in order to be cured.

Instructions

Gonorrhea Patients Following Treatment

1. DO NOT drink alcoholic drinks for 72 hours (3 days) after treatment because mild elevation of liver caused lowered levels of antibiotic and possible inadequate treatment.
2. This antibiotic may cause some dizziness and drowsiness during the next day because it is such a strong dose of medicine.
3. Until the return visit (test-negative) do not have sex with anyone. You may infect or infect someone else.
4. Return for check for test-negative 72 hours after you are cured.
5. NOTES: DO NOT use alcohol or any other drugs. Check for medicine. The use of alcohol, damaged blood and circulation for 100 hours may lead to post-gonorrhea infections.

SECTION 2

PATIENT SURVEY

"HOW DO PATIENTS FEEL ABOUT HEALTH DEPARTMENT SERVICES?"
"WHAT DO THEY KNOW ABOUT GONORRHEA?"

Results - Survey I interviewed patients who came to the Outpatient Care Clinic for their initial exam and treatment. The results showed that the primary reason patients came to the Outpatient Care Clinic for STD exams was privacy and confidentiality, not cost or convenience. Patients generally first heard about the Health Department's Clinic from friends and Planned Parenthood, and the odds were about 50-50 that they had been to a VD clinic before. Respondents did not feel charges were too high. Patients were very positive about the amount of time nurses spent with them, but results seem to indicate patients may want more STD information from the nurses. Generally, patients knew about STD transmission, prevention, and long-term effects. Respondents' educational levels ranged from 10th grade or less (21%) to a high school education (37%). Forty-two percent had at least one year of college and 12% graduated. The Clinic served mainly low income patients (yearly income less than \$3,000), although 16% reported they have annual income of \$14,000 and above. (See page 2.6 for the full report.)

Survey II interviewed patients who came to the Outpatient Care Clinic for their post-cure exam. Patients generally first heard about the Clinic from friends and Planned Parenthood, and there was a 50-50 chance the person had been to a VD clinic before. Patients felt Health Department charges were about right, only 12% felt the fees were too high. Nurses gave patients as much information as they wanted, spent enough time with them, and seemed to care about the patient's social problem. Ironically, only 8% thought they would come to the Health Department as if they needed to go to a VD clinic again, possibly because they do not plan on contracting VD again. The majority of patients knew about STD transmission, prevention, and long-term effects. The education level of patients was from eighth grade to a masters level: 13% had eleventh grade or less education, 41% had a high school education, 12% had some college education, 6% had graduated from college, and 6% had a masters degree. The Clinic served mainly low income patients, income less than \$3,000 per year, although 23% reported income of \$14,000 and above. (See page 2.13 for the full report.)

Missoula's survey results were used to change some outpatient procedures. Since some patients said they were uncomfortable when asked the reason for their visit while they were in the waiting room, sign-in procedures were changed. The survey also showed that few people learn about the Outpatient Care Clinic from health care providers, so the Department sent Public Service Announcements to all health care providers in the Clinic's service area.

Conducting a patient opinion survey is an excellent way to gain feedback from your patients. The results of the Missoula surveys were very valuable to the Health Department staff, and the survey procedure was well received by patients.

Recommendation - Ask patients to fill out a questionnaire while they are still in an examination (or private) room. The pretest of the Miscole surveys showed that handing out questionnaires in the waiting area is very threatening to patients.

Methodology - Survey sample size at the 95% confidence level (plus or minus 5% accuracy) is generally determined by this formula:

$$\frac{(N)(.25)}{N\left(\frac{.05}{n}\right)^2 + (.5)(.5)} = n$$

N = number of patients per year

n = sample size

If surveying a valid sample size is impractical, try to survey all patients for at least three months. Although your sample size won't be strictly valid, three months should give you a fairly accurate indicator.

Survey forms may be used either as they appear, as examples, or modified to fit your individual program. A sample is shown on page 2.3.

1. Initial Visit Survey — Give each STD patient a questionnaire at the end of their clinic visit and ask them to fill out a survey and place it in a sealed box. Do not answer questions about survey items or help the patient in any way. If a patient refuses to complete a survey, explain the purpose of the survey once more. If patient still refuses, conclude the visit.
2. Test-of-Cure Patient Survey (to see if patients who have been given STD information know more gonorrhea facts than Group 1) — Same procedure as 1.

Be sure to give each patient a survey form to avoid biasing the survey.

FINAL AND FINAL PRELIMINARY REPORT

COMMUNITY HEALTH SERVICES EVALUATION AND PLANNING PROJECT

SUMMARY

You will start seeing articles about the Evaluation Models in most of the major wide newsletters as well as national newsletters and journals. Final reports are enclosed and include the Home Health Referral Study-Final Report, Home Health Referral Record revision, Sexually Transmitted Disease Outcome Statistics Report, STD Opinion Survey-Part II Report, and Communicable Disease Protocol revision. It was a pleasure working with everyone and I hope the models are used and/or read on a regular basis.

PROJECT BACKGROUND

This year's Evaluation Project objectives focus on five major areas:

1. To consult with evaluation-model users at least bi-monthly to answer possible questions, solve problems, or refine evaluation methodologies.
2. To continue yearly program cost analyses, surveys, statistics, and other methodologies as needed by program administrators.
3. To continue to analyze data from ongoing evaluations.
4. To develop additional evaluations as requested by participating health departments.
5. To respond to statistical, evaluation, and miscellaneous information requests by other health departments as well as the public as time allows.

Continuous evaluation-model testing in Missouri County will insure that statistics, protocols, questionnaires, and methodologies are current and providing useful data for program managers.

PROJECT STATUS

This is the last quarter of the Community Health Services Evaluation and Planning Project. Final reports are included and each department will receive one last phone call to clear up questions.

Clinic nurses completed self-evaluations using the gonorrhea protocol, resulting in a major procedural change in the Sexually Transmitted Disease protocol. Clinic nurse will now take all hook tests, rather than explaining the procedure to the male patient and having him perform the hook test. This should increase reliable tests. The revised protocol is enclosed and replaces the old protocol in the STD Evaluation Model Users' Guide.

Although it has been a year, the STD Patient Opinion Survey-Part II was completed in June. This survey, involving 44 patients, confirmed that patients are more knowledgeable about STDs and the prevention and treatment efforts, more comfortable in coming to the clinic, and more satisfied with the information they obtain from the clinic. In addition, 44 percent of the Part II survey is the response to the question asked by the Missouri Department of Health, instead of going to the Missouri Department of Health. This was a factor, Part I respondents were asked to provide their own information. They are a couple possibilities. The first is that the information was not collected

poor economic situation and/or (2) patients are first concerned about confidentiality once this issue is resolved, cost becomes more important. The Part II Survey Report is enclosed, along with a revised Section 2 introduction which replaces pages 2.1-2.2 in the STD Users' Guide

The Outcome Statistics Report for FY 1982 should be added to the STD Users' Guide, Section 4.

The Prenatal Education Users' Guide called for conducting a two-month follow-up of all participants taking classes. Missoula's class format changed substantially, making it difficult to complete this survey. Telephone interviewing problems were accentuated and the study was not completed. Please replace Section 3 Two-Month Follow-Up, with the revised copy, noting the addition of a Results section.

The Home Health Referral Protocol was developed to help increase the number of accepted referrals to the home health caseload through consistency from referral to referral. A record review from May 1980 - April 1981 and May 1981 - April 1982, should have revealed the effectiveness of the Protocol. This did not occur because of a staff turnover in the middle of the second year. The new staff person was not aware of the Protocol. A report is presented, with general results, for your information (Report, pages 4.9-4.12). If you are currently using this Protocol, you could conduct your own study by comparing results from referrals taken before and after protocol utilization.

As a direct result of the Referral Protocol study, changes were made to the Referral Record (4.5a). The major changes are the addition of spaces for Medicaid and Medicare claim numbers and extra patient status categories. The question "How did you first learn about Home Health care?" is deleted because it is not asked during the course of the interview since the majority of referrals come from physicians or discharge planners.

Requests are still coming in for the Home Health audit and evaluation. This indicates the need for such a tool is needed and wanted by home health agencies. The response to the model has been very positive and many of the 18 agencies are using one or more methodologies.

Several revisions were made to Communicable Disease protocols. The enclosed copies replace pages from the current protocols. A new tuberculosis protocol is in the writing stages. If you are interested in receiving a copy of this, please contact Bill DeCou, 301 West Alder, Missoula MT 59802, (406) 721-5700, 364.

The Subdivision Review and Licensed Food Establishment models did not have any changes or additions made this quarter.

CUT COPY

Articles on the Evaluation Models have been submitted to state-wide newsletters and national magazines, pending acceptance.

This is the last report you will receive concerning this Project. It was a process working with everyone. Reviewing each model on a yearly basis was a goal of the project and departments.

Joan Blatin
Missoula
July 1982

TO: Francis L. A. R. in, Director
FROM: Susan H. H. H. H.
DATE: June 21, 1961
RE: Results of Outpatient and Clinic STD Patient Opinion Survey

Summary

Survey results show cost, convenience and satisfaction are highly important test-of-cure (Part II) patients come to the Health Department. Patients generally first hear about the Clinic from friends and family. However, and there is a 50-50 chance the person has been to a VD Clinic before. Patients tell Health Department charges are about right, only 12% feel the fees are too high. Nurses give patients as much information as they want, spend enough time with them, and seem to care about the patients' medical problem. Ironically, only 45% think they would come to the Health Department if they had to go to a VD clinic again, possibly because they do not plan on contacting VD again. The majority of patients do know about STD transmission, prevention, and long-term effects. The education level of patients went from eighth grade to a masters level; 18% have eleventh grade or less education, 41% have a high school education, 19% have some college education, 6% have graduated from college, and 6% have a masters degree. The Clinic serves mostly low income patients, income less than \$3,000 per year, although 23% report income of \$14,000 and above.

Background - Researcher's Mental Design

The research design calls for (1) surveying patients who come to the Outpatient Care Clinic for their initial exam and treatment (Part I), and (2) surveying a different group of patients who return for their test-of-cure (Part II).

We hypothesized that the second group of test-of-cure patients would (or at least should) show higher levels of knowledge and comfort with their visit at the Health Department's clinic and more satisfaction with information provided to them. Using this research design avoids the possibility of surveying patients and influencing their answers or perception the second time, or making them more sensitive than they may have otherwise been to information they get at the Clinic.

The first survey ran from December 1, 1960 through February 15, 1961. Thirty-seven completed questionnaires were received for that time period. Statistics show the Clinic sees 17 STD patients per month. The second survey ran from April 1961 through May 1961. A total of 17 completed questionnaires were received for that time period. (Note that on a statistically valid sample of 12.) Statistics show the 17 test-of-cure patients are mostly female, are married, have no children, and are not employed. They are mostly white, have a high school or college education, and are in the middle income range. The STD nurses did a very good job of giving information. Patients were not sure at times whether they had been to the Clinic before, or if the test of cure was correct, or if the test was correct.

The answer for this section is the random wash question. The question appears, followed by results for both Part II and Part I, respectively, and an analysis. Part II respondents are first-time patients, while Part I respondents are initial exam and treatment patients.

1. How did you first find out about the Clinic?

| Part II | Response Categories | Part I |
|---------|-----------------------|---------------------|
| 41% | Friends | 49% |
| 6% | Newspaper or Radio | 7% |
| 24% | Planned Parenthood | 18% |
| 6% | Doctor | 2% |
| 0% | VD Hot Line | 7% |
| 24% | Other | 25% |
| | Poverello Center (6%) | Welfare Office (2%) |
| | Hospital (12%) | School Program (2%) |
| | Unknown (6%) | Sister (5%) |
| | | TV (2%) |
| | | Guessed (2%) |
| | | John Doe (1%) |
| | | Clinic Center (1%) |
| | | Unknown (1%) |

Analysis: Although there is a slight increase in the percentage of doctors referring patients to the Clinic, we still need to ask - should the Clinic be receiving more referrals from doctors? Word-of-mouth referrals are still high and referrals from Planned Parenthood have increased. The VD Hot Line appears an ineffective means of referral.

2. Have you ever been to a VD clinic before?

| | | |
|-----|---------------------------------|-----|
| 35% | Yes, within the past 12 months. | 19% |
| 6% | Yes, more than a year ago. | 31% |
| 59% | No, never before | 50% |

Analysis: Results from this question show the majority of clinic test-takers are patients are first-time STD patients. As with the results of the Part I survey. An interpretation of the question may have caused some of the difference.

3. Why did you choose to come to the Health Department Clinic, instead of going somewhere else?

| | | |
|-----|----------------------------|------------------------|
| 34% | cost less | 21% |
| 26% | easy to find/convenient | 14% |
| 24% | confidential and private | 14% |
| 17% | other | 14% |
| | friend came here/told me | have to require doctor |
| | I better come in | only place I can go to |
| | was told to report it here | my health and to know |
| | by doctor's recommendation | staff information and |
| | more knowledgeable than | talk to |
| | private physician | department |

4. How did you feel about the change in the way the health information was handled?

Analysis: An interesting trend is the response given to this health assessment. Confidentiality was a concern for Part I patients, while cost was slightly more important in Part II patients. There are a couple of things to take into account. This could be a reflection of the general economic situation in Michigan during the study, and/or patients are first concerned about confidentiality. One time, we were uncomfortable with the confidentiality issues, cost became more important.

(Compare to other places), do you feel the Health Department's No Charge is:

| | | |
|-----|---------------------|-----|
| 9% | Way Too High | 9% |
| 12% | A Bit Too High | 9% |
| 41% | About Right | 53% |
| 29% | A Bit Too Expensive | 19% |
| 0% | Way Less Expensive | 19% |
| 18% | No response | |

Analysis: If these results are presented in three groups, (1) too high, Part I = 12%, Part I = 9%, (2) about right, Part I = 41%, Part I = 53%, and (3) less expensive, Part I = 10%, Part I = 38%. Results show the charge is not coming right away. Only a small percentage feel the charge is too expensive.

5. Please circle the number closest to how you feel:

a. If you ever need to go to a MD clinic again, would you prefer to go somewhere else?

| | | |
|-----|---------------|-----|
| 53% | probably no | 42% |
| 15% | definitely no | 38% |
| 6% | maybe | 0% |
| 0% | probably yes | 4% |

b. Did the clinic nurse see if you had a record with another doctor?

| | | |
|-----|----------------|-----|
| 76% | definitely yes | 34% |
| 14% | probably yes | 21% |
| 0% | maybe | 5% |
| 0% | definitely no | 2% |

c. Did the nurse speak to you about your health?

| | | |
|-----|----------------|-----|
| 15% | definitely yes | 21% |
| 14% | probably yes | 1% |
| 0% | definitely no | 0% |

d. Did the nurse ask you about your health?

| | | |
|------|----------------|------|
| 100% | definitely yes | 100% |
| 0% | probably yes | 0% |
| 0% | definitely no | 0% |

5. Please circle the number closest to how you feel: (cont.)

Analysis: Test-of-cure patients should show more satisfaction with information provided them than the survey 1 (initial exam) patients. This hypothesis proved true. The strongest yes answers would give patients as much information as they want, especially in Part I results where the strongest yes shows more than a 50% change time with patients.

The more significant difference between the two surveys was the decrease in the number of people who would return to the VD clinic department if they ever had to go to a VD clinic again. This could possibly be because they do not plan on needing a VD clinic again.

6. Please circle the number closest to how the clinic made you feel:

| Part II | 3 | 2 | 1 | 0 | 1 | 2 | 3 |
|---------|-------------------------|---|---|-----|-----|-------------------------|-----|
| | embarrassed and awkward | | | | | comfortable and relaxed | |
| | 6% | | | 12% | 12% | 17% | 53% |

| Part I | 3 | 2 | 1 | 0 | 1 | 2 | 3 |
|--------|---|---|----|-----|-----|-----|-----|
| | | | 5% | 13% | 24% | 16% | 42% |

Analysis: One hypothesis is the second group surveyed (test-of-cure patients) should show higher levels of comfort than the first survey group. At the extreme, comfortable and relaxed (3), the comfort level was higher for test-of-cure patients. This coincides with positive responses to 5(a-d). As reported in the Part I report, there is still room for improvement.

7. The first symptom of gonorrhea in men is:

| | | |
|-----|---|-----|
| 6% | usually no symptoms | 6% |
| 62% | burning pain when urinating and/or a discharge+ | 81% |
| 9% | stomach pains and/or | |
| 14% | backache | 0% |
| | not sure | 11% |

8. The first symptom of gonorrhea in women is:

| | | |
|-----|---------------------------|-----|
| 1% | cramps and backache | 3% |
| 1% | swelling on sex organ | 6% |
| 67% | usually have no symptoms+ | 63% |
| 35% | not sure | 26% |

10. The following are indications of gonorrhea in both men & women:
 a. Discharge from the penis
 b. Painful urination
 c. Painful sex
 d. All of the above

9. The following ways to prevent gonorrhea:

| | | |
|----|----------------------------------|-----|
| 75 | use both barrier pills | 40% |
| 60 | use rubber condoms | 40% |
| 20 | urinate after sexual intercourse | 10% |
| 50 | after sex | 30% |
| 50 | not sure | 10% |

10. The following indications of gonorrhea in both men & women:
 a. Discharge from the penis
 b. Painful urination
 c. Painful sex
 d. All of the above

| | | |
|-----|----------------------------|-----|
| 80 | sterility | 10% |
| 30 | severe, constant back pain | 10% |
| 100 | death | 10% |
| 60 | sterility | 40% |
| 60 | heart disease | 30% |
| 120 | infertility | 50% |

11. Pelvic inflammatory disease (PID) is a common complication of untreated gonorrhea, but is rarely very serious and is easily treated.

| | | |
|-----|----------|-----|
| 100 | true | 50% |
| 100 | false | 40% |
| 40 | not sure | 10% |

Analysis: Hypothesis - Survey II respondents should be more knowledgeable than the Survey I respondents. Questions 7 - 11 were used to prove/disprove this hypothesis. Overall, the Survey II respondents were more knowledgeable than Survey I respondents. Hypothesis is true.

Looking at each question individually, Survey II respondents answered question 10 correctly. Survey I respondents only answered question 10 correctly. In correct answers to questions 7 - 11, Survey II respondents showed improvement on Question 11. Given with these improvements, there is room for further improvement. Survey I respondents answered question 9 correctly. Survey II respondents answered question 9 correctly.

12. The following are the first year of age of 1971 respondents:

| | | | | |
|-----|------------------|-----|------------------|-----|
| 100 | 1971 female - 30 | 120 | 1971 female - 10 | 100 |
| 100 | 1971 male - 30 | 170 | 1971 male - 10 | 100 |
| 100 | 1971 female - 30 | 100 | 1971 male - 10 | 100 |
| 100 | 1971 female - 30 | 100 | 1971 male - 10 | 100 |
| 100 | 1971 female - 30 | 100 | 1971 male - 10 | 100 |

1976-1977 Opinion Survey

Page 10

Page 10

10. Please circle the best answer for each of the following questions.

10.1. The majority of respondents have attained a college education, although 15% (only nine percent) have attained a college education. These results are very similar to first survey results. There are significant differences in health education.

10.2. How old are you?

| | | |
|---|-------------|-----|
| 0 | 14 or under | 0% |
| 1 | 5 - 19 | 23% |
| 2 | 20 - 24 | 20% |
| 3 | 25 - 29 | 24% |
| 4 | 30 - 34 | 3% |
| 5 | 35 and over | 12% |

10.3. What is your sex?

| | | |
|---|-------------|-----|
| 1 | Male | 74% |
| 2 | Female | 26% |
| 3 | No response | 0% |

10.4. What is your approximate weekly income, before taxes?

| | | |
|---|---------------------|-----|
| 0 | under \$5,000 | 41% |
| 1 | \$5,000 - \$10,000 | 34% |
| 2 | \$10,000 - \$15,000 | 17% |
| 3 | \$15,000 - \$20,000 | 7% |
| 4 | \$20,000 and over | 1% |

10.5. What ways would you like to see the following issues addressed?

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

"It's all the way to the moon"

Health Care
State of Illinois
JAN 1981
Page 1

1.1.1.1

The survey was designed to provide information on the current knowledge, attitudes, and beliefs of health care providers. The results of the post-survey evaluation are (slightly) more favorable than those of the pre-survey evaluation. The health care providers have a better understanding of the survey. However, there is still room for improvement in the future.

I am a pleasure in sending these results for you.

cc: David Saffer, Health Officer
Ethel Montgomery, Field Supervisor
Jan Velez, MD

the 1990s, the number of people with a mental health problem has increased by 50% (Mental Health Act 1983, 1990).

There is a growing awareness of the need to improve the lives of people with mental health problems. The Department of Health (1994) has set out a vision of a new mental health service, one that is more effective, more efficient, more humane and more responsive to the needs of the community. This vision is based on the following principles:

- People with mental health problems should be treated as individuals, with their own needs and wishes.
- People with mental health problems should be treated with respect and dignity.
- People with mental health problems should be treated as equal citizens.
- People with mental health problems should be treated as part of the community.

The Department of Health (1994) has also set out a vision of a new mental health service, one that is more effective, more efficient, more humane and more responsive to the needs of the community.

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SECTION 3

A. COSTS OF CONDUCTING GONORRHEA PROGRAM

Results - Missoula's Gonorrhea Program cost \$7,085 in FY 1980. This cost includes \$11.02 for each patient examined and found negative, and \$17.25 for each gonorrhea positive patient (for examination, treatment, and test-of-cure). Missoula administrators revised charges for gonorrhea services to better reflect actual cost. The cost analysis provided budgeting and program planning for FY 1981 and 1982.

Discussion - To be accurate, program costs should come as much as possible from staff time sheets, supply purchase records, and patient statistics. You can use estimates, but the cost analysis's over-all accuracy will be reduced.

Methodology - See the detailed explanation on the back of the program cost analysis (page 3.3) and an example (Missoula's results, page 3.4). A department overhead analysis is shown on page 3.5 and 3.6 (item 4 on the cost analysis).

B. COST OF SEXUALLY TRANSMITTED DISEASE PRESENTATIONS

Results - Because the Missoula Health Department does not regularly provide school nursing services, staff gave only one talk in FY 1981. The cost of that presentation was \$1.27 per student, or \$40.75. Although this was not a good sample, we felt the cost data is representative.

Discussion - This information is easy to collect. Each time a staff member is asked to present venereal disease information to the public, they should fill out a STD Information - Time and Audience Card (shown page 3.7).

Methodology - By simply calculating the costs of each presentation as shown on the card and then adding all presentations' costs yearly (or monthly, quarterly, or semi-annually), you will have total cost. Program overhead can be estimated at 12% of personnel costs and department overhead can be figured by using the worksheet shown on page 3.5 and 3.6.

C. COST OF CONTACT INVESTIGATION

Results - Based on 173 contact reported by gonorrhea patients in 1980, each contact cost \$6.10 to investigate, for a total yearly cost of \$1,055. These cost figures helped the Nursing Director plan the FY 1982 budget.

Discussion - Cost information is easily gathered by filling out a short Gonorrhea Contact Card for each contact. The pretest of the form showed that its biggest problem was staff forgetting to fill out the forms. An alternative is to fill out a form for a set time period of, say, three months to get a good sample. Results of the sample can be used in lieu of a full year's data.

Methodology - Fill out one form for each contact, breaking time down into five minute intervals for both phone and field investigation. Mileage should be figured to and from the office, or as a proportion if the trip was for more than one purpose. The forms may be tabulated quarterly, or at the end of the sample period. Use the results of the Contact Card to fill out the Cost Analysis.

The Gonorrhea Contact Card (page 3.8) is an easy way to compute staff time and mileage costs. That information can then be used on the STD Contact Cost Analysis, which computes the actual costs of contact work, including program overhead costs and general department overhead. (To compute the department overhead, see page 3.5).

Program Cost Analysis

1. Personnel: RN time/pt x (salary + fringe)
x # pts. screened (1777)

pts. screened
only

60 +

1. OUTPATIENT CLINIC

a. Personnel: RN time/pt x (salary + fringe)
x # pts. screened (1777)

RN time/pt x (salary + fringe)
x # pts. found + for gc (1777)

b. Lab. Test: time/qc test x (salary + fringe)
x # pts. screened

Lab. time/qc test x (salary + fringe)
x # pts. screened and retested (1777)

c. Nsg. Administrative Costs: (1777) (1777)

Nsg. Director

Nsg. Supervisor

Clerical Support

2. SUPPLIES

a. vacutainer

b. test tubes/pt x # pts.

c. swabs

d. slides

e. stain conversion oil

f. culture plate

g. forms

h. medication

i. medication container

j. sterile applicator

k. needle

l. other

3. CONTACT INVESTIGATION

a. RN time/pt x (salary + fringe) x # calls

b. Mileage \$ ____/mi. x # calls

c. OTHERS: (total charges + fringe) (1777)

4. TRAINING, BOOKS, ETC.:

EXPLANATION

GC Program Cost Analysis

Note: The worksheet will use its own system of breaking down the time spent on disease investigation and surveillance. The cost analysis worksheet, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation. The Gonorrhea Cost Analysis Worksheet is split into two sections to show the cost of screening suspect cases of GC and to find the costs of treating, administering tests-of-cure, and of following up contacts of positive GC patients. The two categories are then added to show the total program costs.

1. Outpatient Clinic (if applicable)

Personnel - "RN time" means average time spent on an "average" patient, and should include filling out records, counseling, reading GC tests, reviewing literature, phone calling to doctors, etc. (Col. A), as well as treating, counseling, tests-of-cure, giving results by phone, etc. (Col. B). (You may want to conduct a time study to give you accurate time per patient.) If more than one nurse works for the OPC, you should use an average hourly salary. To find the exact number of GC patients, refer to the State's Monthly Gonorrhea Report.

Lab Technician - (If applicable.) Includes all time spent by the microbiologist on each patient and test, including reading tests, consulting with nurses, etc.

Nursing Administrative Costs - This category includes the costs of administering the GC program from the nursing director on down. To allocate costs, one of three methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; or 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all personnel and others involved in case/outbreak surveillance and investigation. The administrative costs should be the (number of hours) times (salary plus fringe benefits) for each category.

EXPLANATION

GC Program Cost Analysis

The GC program cost analysis is a method for determining the cost of the GC program. The cost of the GC program is determined by adding the costs of the various components of the program. The components of the program are: 1) Personnel, 2) Supplies, 3) Contact Investigation, 4) Overhead, and 5) Training, Books, Periodicals. The cost of each component is determined by multiplying the number of patients by the cost per patient. The total cost of the program is the sum of the costs of all components.

1. Outpatient Clinic (if applicable)

Personnel - "IRN time" means average time spent on an "average" patient, and should include filling out records, counseling, reading GC tests, reviewing literature, phone calling to doctors, etc. (Col. A), as well as treating, counseling, tests-of-cure, giving results by phone, etc. (Col. B). (You may want to conduct a time study to give you accurate time per patient.) If more than one nurse works for the OPC, you should use an average hourly salary. To find the exact number of GC patients, refer to the State's Monthly Gonorrhea Report.

Lab Technician - (If applicable.) Includes all time spent by the microbiologist on each patient and test, including reading tests, consulting with nurses, etc.

Nursing Administrative Costs - This category includes the costs of administering the GC program from the nursing director on down. To allocate costs, one of three methods can be used (in order of preference): 1) hours budgeted/spent by administrative/support personnel; 2) percent of time budgeted; or 3) best available estimate of hours spent. To be very accurate, comprehensive time sheets should be kept by all personnel and others involved in case/outbreak surveillance and investigation. The administrative costs should be the (number of hours) times (salary plus fringe benefits) for each category. Other administrative costs may be added if necessary.

2. Supplies

This category includes all supplies (lab and OPC) used for each patient. Although the supplies cost could be determined either by dividing the total yearly supplies cost by the number of GC patients per year, or by costing each supply used for each patient, the latter method is more accurate. Using the second method, figure the cost of each supply and multiply by the number needed by each patient and then multiply that total by the number of patients who fit into Column A and Column B.

3. Contact Investigation

The "GC Contact Cost Record" can be used to find the exact time spent on each contact investigation, but be sure to include all time -- phone, field, consulting, professional reading, etc. The standard per diem reimbursement figure can be used to figure mileage costs.

4. Overhead

The Nursing Overhead category is designed to allocate the building, maintenance, equipment, and departmental administration costs as part of the cost of a nursing program. To find the percentage figure, refer to the Department Overhead Cost Sheet and multiply all program personnel costs (including fringe) times the overhead percentage to get GC program overhead costs.

5. Training, Books, Periodicals

Include only costs specific to the GC program. Costs which are general should be allocated to the general overhead (see Department Overhead Cost Analysis).

OVERHEAD

Health Department Cost Analysis

It is important to allocate the total costs of administering a program. It should be noted that overhead is an estimation of the health department's administration of all department programs, not of other overheads. Hence, the need for an overhead figure.

Total Administrative Salaries

This means salaries plus appropriate yearly fringe benefits and merit raises of only personnel involved in the general administration of the health department. (Other personnel may be added if other departments are organized differently. For example, a health department personnel director or assistant health officer should be added to this category.) The receptionist is the person who acts for the entire health department, the general office clerk (or a portion of her/his salary) acts as vital statistics clerk.

To calculate (a), or total administrative salaries, multiply total salaries (which should include yearly raises) by yearly fringe percentage.

Other Administrative Personnel Expenses

"Termination Reserve" means those monies set aside to pay vacation and sick pay severance to employees who quit. "Recruitment" means costs budgeted for newspaper ads, printing and other costs of filling vacant positions. "Conferences and Meetings" refers to those of general interest to health administration and not applicable to a specific program. "Training" means general management or administrative training, not that attributable to a specific program. The "Books and Periodicals" category includes general health planning, public health, and management materials of general interest and not attributable to a specific program. "Travel" means general health department trips and excludes travel for specific programs or conference travel (to be included under "Conferences and Meetings"). Blanks are provided for other categories specific to the general administration of a health department. Add all these categories to get Total Administrative Personnel Expenses (b).

Other Administrative Expenses

Expenses in this category are those which are general to the running of an agency. Since it is virtually impossible to split out the number of pencils, pieces of paper and the like used by one program or activity, it is a good deal easier to include these as a total category and be able to easily allocate them in the department overhead computation. (The only exception to this would be grants where administrative expenses are each listed and funded separately and should be allocated as such.) Office supplies, copies and printing, postage, office equipment and phone are total costs per year for the whole department excepting grant allocations. Interest on warrants is interest paid on monies borrowed from a bank to cover current department operating expenses (if applicable). Other administrative expenses should be included in this category if they are attributable to the general operation of a department. (Note: It is more accurate and easier to charge vehicle expenses to the program which uses them on a cents-per-mile basis. It is also a good deal more difficult to charge phone, office space and the like out on a program-by-program basis.)

Building and Maintenance

Housing costs are to be included in the overhead computation because of the difficulty of allocating square footages, utilities, phones, etc., to each program or activity. This category should cover all housing expenses of the department and laboratory.

Other Expenses

This category should include costs of routine audits, administrative consultants, depreciation on capital, or other similar items.



OVERHEAD

Health Department Cost Analysis

The purpose of this cost worksheet is to provide a "formula" which
 user to determine the overhead, or "burden" of health department
 on a percentage basis on their overhead costs can be determined.
 The health department's health department program.

1. Administrative Salaries

- a. Health Officer _____
- b. Administrative Assistant _____
- c. Administrative Secretary _____
- d. H.D. Receptionist _____
- e. H.D. Accountant _____
- f. Vital Statistics Clerk _____
- g. Medical Consultant _____
- h. Other: _____

x _____ (fringe)

_____ Admin. salaries
(x)

2. Other Administrative Personnel Expenses

- a. Termination Reserve _____
- b. Recruitment _____
- c. General Conferences & Meetings _____
- d. General Training _____
- e. General Public Relations _____
- f. Administrative Travel _____
- g. Other: _____

_____ Other administrative
expenses

3. Other Administrative Expenses

- a. All Office Supplies _____
- b. All Copies and Printing _____
- c. All Postage _____
- d. Office Equipment & Maintenance _____
- e. All Telephone Charges _____
- f. Interest on Warrants _____

_____ admin. expenses
(c)

4. Building and Maintenance

- a. Rent OR \$ _____ per sq. foot
x number of sq. feet of office,
lab, etc. _____
- b. Maintenance _____
- c. Utilities _____
- d. Insurance _____
- e. Other: _____

_____ building and
(d) maintenance

5. Other Overhead Expenses

Other: _____

_____ other expenses
(e)

TOTAL OVERHEAD COSTS =

$$\text{Overhead Computation} = \frac{a + b + c + d + e}{\text{total H.D. salaries + fringe}} = \text{OVERHEAD (\%)}$$

STD Information-Time & Audience Card

PHN/Hlth. Ed. _____

Date of Presentation: _____

Group: _____

Number: _____

Personnel Time

- a. Research or data collection _____;
- b. Phoning and meeting arrangements _____;
- c. Actual session _____;
- d. Followup _____;
- e. Other _____;

Cost

- a x (sal + fringe) _____
- b x (sal + fringe) _____
- c x (sal + fringe) _____
- d x (sal + fringe) _____
- e x (sal + fringe) _____

| | | | | | | |
|-----------|---|-----------|---|----------|---|-------|
| personnel | + | % program | + | % dept. | = | TOTAL |
| costs | | overhead | | overhead | | |

Materials: _____

Total \$ _____

Mileage: _____

Total \$ _____

Comments: _____

TOTAL COST ☐

Cost/Participant ☐

Used 5/81

STD Information-Time & Audience Card

PHN/Hlth. Ed. _____

Date of Presentation: _____

Group: _____

Number: _____

Personnel Time

- a. Research or data collection _____;
- b. Phoning and meeting arrangements _____;
- c. Actual session _____;
- d. Followup _____;
- e. Other _____;

Cost

- a x (sal + fringe) _____
- b x (sal + fringe) _____
- c x (sal + fringe) _____
- d x (sal + fringe) _____
- e x (sal + fringe) _____

| | | | | | | |
|-----------|---|-----------|---|----------|---|-------|
| personnel | + | % program | + | % dept. | = | TOTAL |
| costs | | overhead | | overhead | | |

Materials: _____

Total \$ _____

Mileage: _____

Total \$ _____

Comments: _____

TOTAL COST ☐

Cost/Participant ☐

User Guide

STD INFORMATION-TIME & AUDIENCE CARD

Personnel

Health Department staff members (nurses, health educators, etc.)

When

Whenever giving STD information to a group such as students, teachers, etc.

Why

To determine the cost of disseminating STD information, to determine how many were in the audiences and to determine what type of group they were. The data will be used in program planning.

How

The form must be completed starting from the time a staff member is asked (or assigned) to address a group about STD. The form must be filled in completely with time in 10 minutes increments.

When the session is completed and all follow-up is concluded, then the form is to be turned in to the Research Unit.

STD Information-Time & Audience Card

Name

J. Doe

Date of Presentation

2-31-80

To:

*8th grade girls at
Meadow School*

Number:

28

Cost (will be filled in by Research Unit)

Time Spent

- Research or data collection *hr.: min.**
- Phoning and meeting arrangements *hr.: min.**
- Actual session *hr.: min.**
- Follow-up *hr.: min.**

Comments:

*Session went well - lots of
questions - asked me to return &
give presentation to boys 3-11-80.*

10 min. minimum & 10 min. intervals

User Guide

STD INFORMATION-TIME & AUDIENCE CARD

Personnel

Health Department staff members (nurses, health educators, etc.)

When

Whenever giving STD information to a group such as students, teachers, etc.

Why

To determine the cost of disseminating STD information, to determine how many were in the audiences and to determine what type of group they were. The data will be used in program planning.

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The form must be completed starting from the time a staff member is asked (or assigned) to address a group about STD. The form must be filled in completely with time in 10 minutes increments.

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STD Information-Time & Audience Card

PERSON

J. Doe

Date of Presentation

2-31-80

To:

8th grade girls at
Meadow School

Number:

28

Cost (will be filled in by Research Unit)

Time Spent

- Research or data collection hr. : min.*
- Phoning and meeting arrangements hr. : min.*
- Actual session hr. : min.*
- Follow-up hr. : min.*

Comments:

Session went well - lots of
questions - asked me to return &
give presentation to boys 3-11-80.

[10 min. minimum & 10 min. intervals]

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____
b. field _____ : _____
miles _____
c. other: _____

initials _____ date _____

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____ ☐ Located
b. field _____ : _____ ☐ not Located
miles _____
c. other: _____

initials _____ date _____

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____ ☐ Located
b. field _____ : _____ ☐ not Located
miles _____
c. other: _____

initials _____ date _____

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____ ☐ Located
b. field _____ : _____ ☐ not Located
miles _____
c. other: _____

initials _____ date _____

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____ ☐ Located
b. field _____ : _____ ☐ not Located
miles _____
c. other: _____

initials _____ date _____

GC Contact Cost Record

a. phone _____ : _____
_____ : _____
_____ : _____ ☐ Located
b. field _____ : _____ ☐ not Located
miles _____
c. other: _____

initials _____ date _____

G C CONTACT COST RECORD

Outpatient Clinic nurses, state field epidemiologist, others as needed.

Use when investigating all gonorrhea contacts.

To help to determine time spent by nursing and epidemiology personnel and to determine outcome (located or not).

Each time a gonorrhea patient refers a contact, a "GC Contact Cost Record" is to be completed by the personnel conducting the investigation. Use one record per contact cited and break time down into 10 minute intervals.

There is room on the record for three phone tries, time spent in the field and miles traveled by the investigator. The category labeled "other" can be used for explanations or other time spent.

Finally, check the "located" or "not located" box. Turn in completed form to Research Unit.



GONORRHEA CONTACT

Program Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the health department of providing gonorrhea contact investigation and surveillance.

✓ actual
— estimated
yearly # of
contacts = 173

1. PERSONNEL COSTS

- a. Phone Investigation: RN time/contact x (salary + fringe) = 130
x # of contacts phoned (75% of all contacts require phone inv.) = 192
ave. @ 12 min. ea. (= .2 hr)
\$6.36 av. sal. + (4.02 fr. @ 16%) = \$7.38
2 x 7.38 x 130 = \$192
- b. Field Investigation: RN time/contact x (salary + fringe)
x # of contacts (25% of all contacts require field invest. = 43)
ave. @ 27 min. ea. = .45 hr
\$6.36 av. sal. + (1.02 fr. @ 16%) = \$7.38
.45 x 7.38 x 43 = \$143
- c. Other: _____
- 335 personnel

2. NURSING DIVISION ADMINISTRATIVE COSTS

- a. Nursing Director
(12.62/yr) (15 hr x 14) = \$189
- b. Nursing Supervisor
(10.65/hr) (18 hr x 14) = \$192
- c. Clerical Support @ 5 min. ea.
(.08 hr) (173) (5.46/hr) = \$76
- d. Other: _____
- 457 admin.

3. SUPPLIES:

_____ supplies

4. MILEAGE

- a. 3 mi./contact x .20 c/mi. per field investigation = 26
\$.60/mi x 43 = \$26
- b. Other: _____
- 26 mileage

5. OVERHEAD: 30% x tot. salary + fringe
\$192 + 143 + 189 + 192 + 76 = \$792 x 30% = 238
- 238 oh

6. TRAINING, BOOKS, ETC. _____
- _____ train.

TOTAL PROGRAM COST \$1056

TOTAL PROGRAM COST PER CONTACT \$6.10

5/81 jsh

Note: Surve per patient from GC Contact Card



SECTION 4

OUTCOME MEASURES — REPEATERS AND CONTACT FOLLOWUP

Results - Based on Missoula's Outpatient records, 30% of patients reported they had a STD before (repeaters). Missoula did not meet its goal of reducing STD repeaters in 1980. Thirty-five percent of the Outpatient records showed that all of the patients' listed contacts were followed-up. Of 445 patients who were examined for gonorrhea, 20% were positive. Fifty-four percent of the records showed patients passed their test-of-cure, while 47% of the records do not show evidence the patient had or passed their test-of-cure. (See full report page 4.4)

Discussion - The outcome measures in this section are easy to gather and clear-cut. Minimum recommendations for gathering outcome measures are:

1. Percentage of Contacts Completely Investigated/Treated — A particularly important outcome because public health's goal is to interrupt the chain of STD transmission.
2. Percentage of Repeaters — Gives an indication of results of patient education.

The Missoula Health Department keeps data on patients' age, marital status, employment, type of earlier STD incidence and treatment. This information is a great help with understanding patient characteristics and designing marketing and public service announcements. In addition, changes in the ages of patients can be a measure of effectiveness of talks to high school students — more emphasis on student education should increase the proportion of patients who are in the 15-19 years of age category.

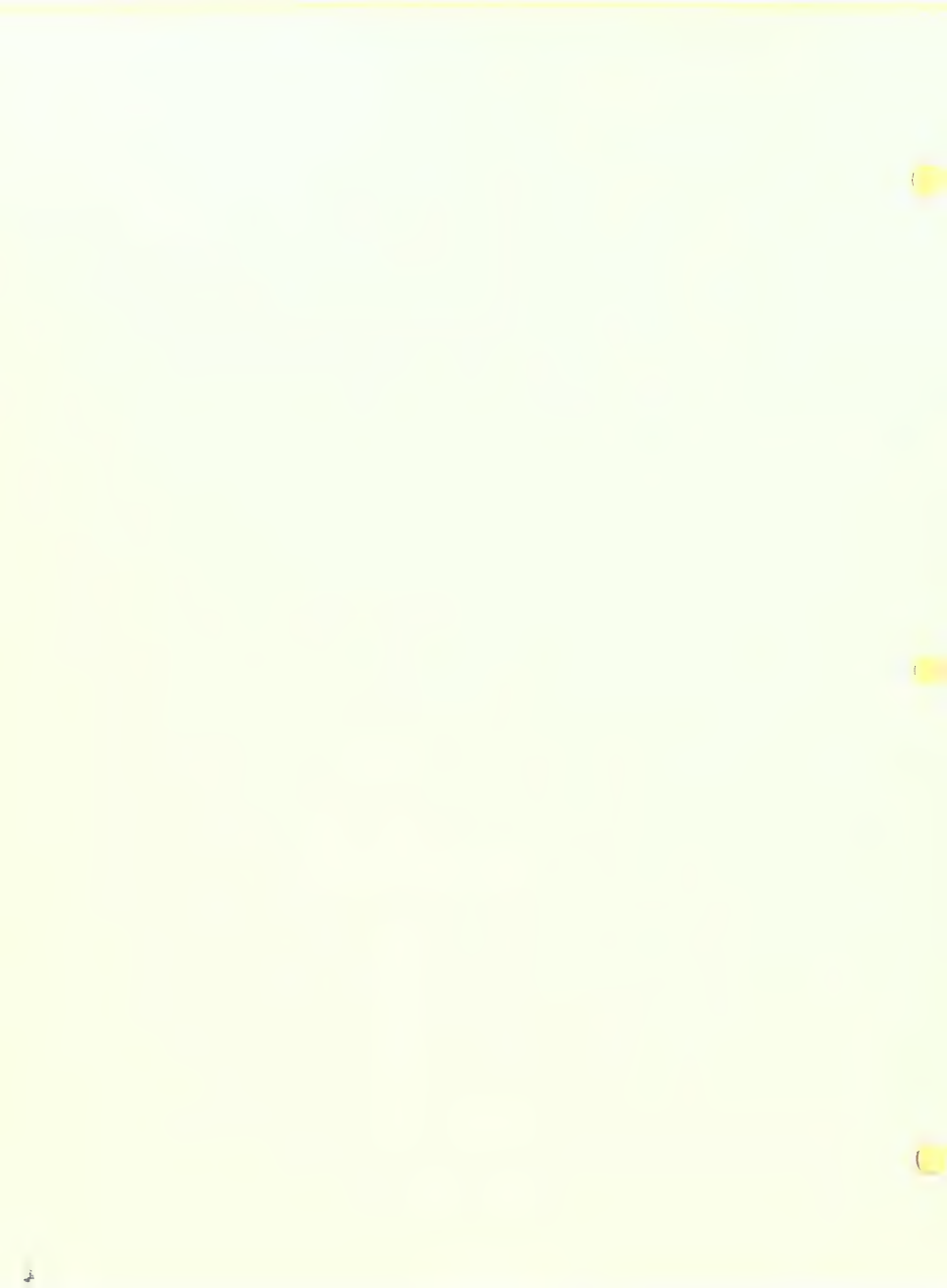
Methodology - The Gonorrhea Statistics sheet (page 4.2) can be designed to gather information from your patient records or from other convenient sources. We recommend dividing information into five categories as shown: total, female patients - negative, female patients - positive, male patients - negative, and male patients - positive. This way, your results can be easily analyzed to look for significant differences between categories.

There are two ways to measure whether or not contacts are completely investigated.

(1) For each patient record, if all contacts were resolved, then that record was marked as "All Contacts Diagnosed." If one of several contacts was not resolved, then the record was put into "Not All Contacts Diagnosed" or an incomplete outcome because one or more contacts with a possible sexually transmitted disease could still be transmitting a disease. Missoula used this method.

(2) Another way would be to look at each contact separately and put each into a "Yes, resolved" or "No, not resolved" category. This would give you information on how many individual contacts were not resolved, unlike Missoula's method (1) which shows how many individual patient's contacts were not all resolved.

$$1 \leq i \leq n, \quad 1 \leq j \leq m, \quad 1 \leq k \leq p, \quad 1 \leq l \leq q,$$
4.2



MISSOULA CITY-COUNTY HEALTH DEPARTMENT

January 12, 1981

TO: Crystal Day
Nursing Director

FROM: Janice S. Bahr
Research Specialist

RE: Outpatient Clinic Gonorrhea Outcome Statistics, Jan.-Dec. 1980.

Here are your calendar year 1980 Outpatient Clinic statistics. They come from the yellow "STD Report" for the clinic nurses fill out for each gonorrhea (GC) patient. The following is a short summary of the findings. Attached is the complete list of statistics on the attached new data form.

REPORT

OPC Gonorrhea Patients:

Age: Female patients who were found positive for GC are generally younger than their male counterparts. Most GC patients are between ages 16 and 25.

Marital Status: Women patients found to have GC are three times more likely to be married than men positive for GC. Divorced men examined for GC are approximately two times more likely to have a disease than divorced women. Analysis shows 94 of the GC Records had marital status listed.

Employment: Women found positive for GC are much less likely to be working full-time than either male patients with GC or the total patient population. Men are slightly more likely to be unemployed (of those men found to be positive for GC). Women patients with GC are much more likely to be students. Analysis shows 84 of the GC Records had employment status listed.

Have you ever had any STD before?: YES: Thirty percent of all patients reported they had a STD before. Nineteen percent of women who were negative for GC said they had a STD before, contrasting with the total average of 30%. Only seven percent of patients who reported they'd had a STD before were treated at the Missoula City-County Health Department. Analysis shows 95 of the STD questionnaires answered to the question listed.

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

Contacts, recorded and followed up. Of those patients found to be positive for GC, women patients were especially more likely to report more than one contact. Approximately 14 of the 16 Records showed zero contacts listed.

All contacts Examined, treated. Thirty-five percent of all GC Records showed that each contact listed had been located, examined, and, if necessary, treated. The remainder had only the records and one or more contacts who were not shown to have been fully treated, (2) examined, (3) treated, or (4) no contacts were listed for a positive GC patient.

General Statistics:

- 23 of all SSI patients are found + for GC
(12 - male; 11 - female)
- in 1980, the GPC saw an average of 37 GC patients per month and an average of 7.4 positive GC patients per month
- 56% of patients passed their tests-of-cure the first time; 1 record (of 29) showed the patient did not pass their test-of-cure until a second try; and 47% of records do not show evidence that the patient had or passed their test-of-cures
- there were 445 SSI records in 1980, N = 445.
Female - = 139
Female + = 27
Male - = 217
Male + = 62
445
- the GPC sees approximately 34% of the reported GC cases in the county.
(244 cases were reported in 1980 for Missoula County; source DHES.)

I have enjoyed compiling these statistics and presenting them to you. Please feel free to make any comments about their usefulness, changes you would like to see in format or content and criticisms about the information.

Please also review the new v.s. the "old" GC Outcome Report forms and advise which you prefer, i.e., which gives you the best management data.

JSH/sp - revised 4/81

cc: Bill DeCou

others

Attached: data forms

other statistics

| | TOFF | % | n=139 | % | n=27 | % | n=62 | % |
|-----------|------|-----|-------|-----|------|-----|------|-----|
| 1 | 1 | | 1 | | 1 | | 1 | |
| 2 | 119 | 24% | 30 | 27% | 9 | 33% | 22 | 26% |
| 3 | 143 | 34 | 48 | 35 | 10 | 32 | 34 | 18 |
| 26-27 | 79 | 18 | 21 | 15 | 3 | 11 | 44 | 20 |
| 28-35 | 56 | 13 | 17 | 12 | 2 | 7 | 27 | 12 |
| 36-40 | 23 | 7 | 7 | 6 | 1 | 4 | 18 | 8 |
| 41 | 14 | 3 | 1 | 1 | 2 | 7 | 9 | 4 |
| 42 | 4 | 1 | 4 | 3 | - | - | - | - |
| incl | 331 | 75% | 102 | 72% | 18 | 67% | 165 | 76% |
| excl | 31 | 2 | 8 | 6 | 4 | 15 | 23 | 11 |
| div | 39 | 9 | 15 | 11 | 2 | 7 | 14 | 6 |
| total | 2 | - | 1 | 1 | - | - | - | 1 |
| sol | 10 | 3 | 5 | 4 | - | - | 5 | 2 |
| NP | 25 | 6 | 8 | 6 | 3 | 11 | 10 | 5 |
| 1 | 197 | 45% | 53 | 38% | 6 | 22% | 110 | 50% |
| 2 | 34 | 8 | 13 | 9 | 3 | 11 | 15 | 7 |
| 3 | 41 | 10 | 41 | 35 | 10 | 36 | 57 | 26 |
| 4 | 2 | - | 1 | 1 | 1 | 4 | - | - |
| 5 | 41 | 11 | 16 | 12 | 5 | 18 | 23 | 11 |
| 6 | 2 | - | 1 | 1 | 2 | 7 | 10 | 5 |
| 7 | 112 | 26 | 37 | 19% | 9 | 33% | 97 | 35% |
| 8 | 143 | 34 | 60 | 13 | 47 | 113 | 53 | 22 |
| 9 | 68 | 15 | 27 | 21 | 5 | 18 | 27 | 12 |
| 10 | 91 | 18% | 17 | 12% | 8 | 29% | 45 | 21 |
| 11 | 51 | 23 | - | - | - | - | 27 | 14 |
| 12 | 3 | 2 | - | - | 1 | 11 | - | - |
| herpes | 6 | 4 | 1 | 5 | - | - | 2 | 3 |
| 1 | 1 | - | - | - | - | - | 1 | - |
| stability | 3 | 2 | - | - | - | - | 2 | 1 |
| 1 | - | - | - | - | - | - | - | - |
| 1 | - | - | - | - | - | - | - | - |
| 1 | 7 | 30 | 10 | 30% | 2 | 26 | - | 2 |
| 1 | 11 | 6 | 10 | 7 | 78 | - | - | - |

| NR. | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-----|----|----|----|----|----|----|----|----|----|
| 1 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 2 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 3 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 4 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 5 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 6 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 7 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 8 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 9 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 10 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 12 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 13 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 14 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 15 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 16 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 17 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 18 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 19 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 20 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

July 2. 1885 attached rept.

190 12/2/80
mole per clote
105 mole per +
115 $\frac{1}{2}$ per +
244 t. reported to Stat. DHE from Mole Co.

∴ all + + are in line - - no a.c. g.

2nd Floor yellow STD Report, OPC - 1/pt.

Date: 1/12/81



MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 West Alder • Missoula, Montana 59802 • Ph. (406) 721-5700

TO: Dennis Lang
FROM: Susan Plath *S. Plath*
DATE: May 19, 1982
RE: Outpatient Care Clinic, STD Outcome Statistics, July 1981 - April 1982

Each year STD outcome statistics are compiled. Last year's results were for the calendar year. This year, data was compiled on a fiscal year basis. In the future, compiling statistics on a fiscal year basis will allow for comparisons.

These results allow us to look at the repeater percentage and compare it to the goal set each year. They will also help us in our public relations efforts (marketing and public service announcements).

The information is gathered from the blue and yellow "STD Report" form the clinic nurses complete on each STD patient. A total of 250 charts were studied, comprising the first ten months of Fiscal Year 1982. If these statistics are used, the last two months' data should be compiled and added to this report.

Statistics can be presented in an aggregate or segregate manner. The results can vary, depending on which method is used. Both are presented in this report. Study the findings and decide which method provides the most beneficial information. This will reduce the computational and report writing time.

OPCC-STD Patient Report

AGE

- Aggregate: In general, the age of STD patients is 21-25 (27%) or 26-30 (21%). Of these STD patients, women were younger than the men. There were only 4 charts, or 1.6%, that did not have this information recorded.
- Segregate: The majority of STD positive females were 21-25 years old (41%) or 16-20 (28%), while the positive males were 21-25 (33%), 26-30 (26%), or 31-35 (26%) years old. The positive women tended to be younger than their male counterparts.

MARITAL STATUS

- Aggregate: STD patients report they are single (70.4%). Past data showed patients reported they were single.
- Segregate: The STD positive patients also reported they were single. In the past STD positive women were three times more likely to be married. For the first 10 months of FY 82, the percentage of positive married people were about the same (+ females 4%, + males 6%; -females 18%, -males 15%).

EMPLOYMENT

- Aggregate: On the whole, STD patients are either employed full-time (41.2%) or the other extreme, unemployed (38%).
- Segregate: STD positive males were twice as likely to have a full-time job (38%) when compared to positive females (18%). The reverse was also true,

positive females were more likely to be unemployed (59%) than their male counterparts (38%).

STD REPEATOR

- Aggregate: The majority of STD patients had not had VD before (58.8%), although those who had a VD before do not lag far behind (33.6%). Many of those reporting a VD before, also mentioned they came to this health department the first time. There were 19 charts (7.6%) that did not have a response to this question.
- Segregate: The positive STD's reported this was the first time they had contacted VD. Positive men were more likely to have had a STD before, 41.2% compared to 27.3% for positive women. This trend was consistent for negative STD patients.

NUMBER OF CONTACTS RECORDED (Positive patients only)

- Aggregate: Patients generally reported one contact (55.3%), with 17.9% reporting two contacts. Approximately 18% of the records were not complete.
- Segregate: The majority of women (68.2%) reported one contact. Less than half the men reported one contact (47.1%). Men were more likely to have two or more contacts than women. The records on 18% of the men and women were incomplete.

ALL CONTACTS EXAMINED AND TREATED

- Aggregate: Sixty-two percent (62%) of the records showed each listed contact was located, examined, and, if necessary, treated. There were 34% of the records which showed one or more contacts who had not been (1) located, (2) examined, (3) treated, or (4) contacts were not listed. Approximately 4% of the records showed the contacts were referred to another agency for followup (State Field Epidemiologist).
- Segregate: Over fifty percent of the positive STD patients' contacts were located/examined/treated. In both males and females, 18% of the records did not contain this information. Twenty-three percent (23%) of the positive female contacts were not treated, examined, and/or located; 12% of the positive male cases did not meet these guidelines.

GENERAL STATISTICS

- 22% of all STD patients were found positive
(20% - male; 27% - female)
- for the 10 months (July-April), the OPCC saw an average of 25 STD patients per month and an average of 5.6 positive STD patients per month
- there were 250 STD records for the 10 month period studied
 - female - = 61
 - female + = 22
 - male - = 133
 - male + = 34

Dennis Lang
STD Outcome Statistics
May 19, 1982
Page 3

The statistics took approximately two hours to collect and about 6 hours to calculate and write. Once you decide on aggregate or segregate data, the calculating and writing time will be reduced.

If there is limited time available for research work, you may want to consider the usefulness of this data. Are you using any parts of it for management purposes? Is this information helping you make time or cost allocations?

SP

cc: Ethel Montgomery
Jan Veleber
Harry Ezell
Bill DeCou
Cathi Darrington

REPORT
OPC STD Statistics

| | TOTAL | | Female - | | Female + | | Male - | | Male + |
|----------------|-----------|----|----------|----|----------|----|--------|----|--------|
| AGE | | | | | | | | | |
| ≤ 15 | 3 1.2% | 3 | 50% | - | - | - | - | - | - |
| 16-20 | 48 19.2% | 11 | 18% | 6 | 28% | 28 | 21% | 3 | 9% |
| 21-25 | 68 27.2% | 13 | 21% | 9 | 41% | 35 | 26% | 11 | 33% |
| 26-30 | 52 20.8% | 14 | 23% | 2 | 9% | 27 | 20% | 9 | 26% |
| 31-35 | 45 18% | 13 | 21% | 4 | 18% | 19 | 14% | 9 | 26% |
| 36-40 | 15 6% | 2 | 3% | 1 | 4% | 12 | 9% | - | - |
| ≥ 41 | 15 6% | 4 | 7% | - | - | 10 | 8% | 1 | 3% |
| NR | 4 1.6% | 1 | 2% | - | - | 2 | 2% | 1 | 3% |
| MARITAL STATUS | | | | | | | | | |
| single | 176 70.4% | 35 | 57% | 16 | 73% | 99 | 74% | 26 | 76% |
| married | 34 13.6% | 11 | 18% | 1 | 4% | 20 | 15% | 2 | 6% |
| div. | 22 8.8% | 11 | 18% | 1 | 4% | 8 | 6% | 2 | 6% |
| widowed | - | - | - | - | - | - | - | - | - |
| sep. | 9 3.6% | 3 | 5% | 1 | 4% | 3 | 2% | 2 | 6% |
| NR | 9 3.6% | 1 | 2% | 3 | 14% | 3 | 2% | 2 | 6% |
| EMPLOYED ? | | | | | | | | | |
| full | 103 41.2% | 22 | 36% | 4 | 18% | 64 | 48% | 13 | 38% |
| part | 15 6% | 5 | 8% | 2 | 9% | 4 | 3% | 4 | 12% |
| unempl. | 95 38% | 21 | 35% | 13 | 59% | 48 | 36% | 13 | 38% |
| homemak | 2 .8% | 2 | 3% | - | - | - | - | - | - |
| student | 23 9.2% | 8 | 13% | - | - | 13 | 10% | 2 | 6% |
| NR | 12 4.8% | 3 | 5% | 3 | 14% | 4 | 3% | 2 | 6% |
| VD BEFORE? | | | | | | | | | |
| yes | 84 33.6% | 15 | 24.6% | 6 | 27.3% | 49 | 36.8% | 14 | 41.2% |
| no | 147 58.8% | 35 | 57.4% | 13 | 59.1% | 81 | 60.9% | 18 | 52.9% |
| NR | 19 7.6% | 11 | 18% | 3 | 13.6% | 3 | 2.3% | 2 | 5.9% |
| TYPE VD | | | | | | | | | |
| gc | 94 42.5% | 14 | 26.4% | 18 | 75% | 35 | 32.4% | 27 | 75% |
| NSU/NGU | 81 36.7% | 4 | 7.5% | - | - | 70 | 64.8% | 7 | 19.4% |
| PID | 2 .9% | 1 | 1.9% | 1 | 4.2% | - | - | - | - |
| herpes | 3 1.3% | 1 | 1.9% | 1 | 4.2% | 1 | .9% | - | - |
| v warts | 0 0 | - | - | - | - | - | - | - | - |
| syphilis | 2 .9% | - | - | - | - | 1 | .9% | 1 | 2.8% |
| other | 38 17.2% | 32 | 60.4% | 4* | 16.6% | 1 | .9% | 1 | 2.8% |
| NR | 1 .5% | 1 | 1.9% | - | - | - | - | - | - |
| hltch dept | 111 82.8% | 15 | 60% | 21 | 95.5% | 41 | 77.4% | 34 | 100% |
| other | 1 .7% | - | - | 1 | 4.5% | - | - | - | - |
| NR | 22 16.4% | 10 | 40% | - | - | 12 | 22.6% | - | - |

*2 also had GC

| | | | | | | | |
|------------------------|------|----|-------|----|-------|----|-------|
| ALL CONTACTS Rx ID? | NR/O | 10 | 17.9% | 4 | 18.2% | 6 | 17.6% |
| | | 31 | 55.3% | 15 | 68.2% | 16 | 47.1% |
| | | 10 | 17.9% | 2 | 9.1% | 8 | 23.5% |
| | | 3 | 5.3% | 1 | 4.5% | 2 | 5.9% |
| | | 1 | 1.8% | | | 1 | 2.9% |
| | | 1 | 1.8% | | | 1 | 2.9% |
| Field Ep. locating | yes | 34 | 61.8% | 13 | 59% | 21 | 62% |
| | no | 9 | 16.4% | 5 | 23% | 4 | 12% |
| | NR | 10 | 18.2% | 4 | 18% | 6 | 18% |
| | | 2 | 3.6% | — | | 2 | 6% |

1 = unable 3%
to locate
(contact in another
state, could not give
description)

ANALYSIS:

Data From: July 1981 - April 1982

Data By: Susan Plath

Date: 5/11/82

SECTION 5

YEAR TO YEAR CHANGES IN COUNTY GONORRHEA RATES

Results - Missoula County's gonorrhea rate has steadily dropped from 492 (1977) to 338 (1980). The rate's decrease since 1978 has closely followed Montana's gonorrhea incidence rate. If this trend continues, budgets for gonorrhea surveillance can also continue to drop, freeing resources for other programs.

Discussion - Although the gonorrhea incidence rate is not an exact measure of public health effectiveness, it is an indicator. Increases in the rate can be an alert that more emphasis is needed on the gonorrhea program, especially if an increase occurs in county incidence at the same time as a steady or decreasing Montana rate.

A more effective communicable disease reporting system (Communicable Disease Users' Guide, Section 1) will probably increase the gonorrhea rate simply because more cases will be reported. It is very important to carefully analyze changes in the gonorrhea rate to see if the increase is a true indication of increased incidence, a result of better reporting, or perhaps a temporary increase caused by a transient population.

Methodology - The State Preventive Health Services Bureau will give you yearly gonorrhea rates ("Gonorrhea Incidence by County") beginning with 1969. The rate is calculated by:

$$\frac{\text{county incidence}}{\text{county estimated population}} \times 100,000 = \text{Gonorrhea Incidence Rate}$$

Rates are easily graphed and updated yearly.

(1)

(2)

(3)

GONORRHEA INCIDENCE GRAPH
MISSOULA COUNTY AND MONTANA

The data for this graph is collected from "Gonorrhea Incidence by County" which is kept by Bruce DeSonia, State Field Epidemiologist. If Bruce does not have the table, call Valinda Holmes, Communicable Disease Clerk, State Preventive Health Services (449-2645).

1. To calculate the disease incidence rate (see Attachment 1):

$$\text{Missoula Incidence Rate per 100,000} = \frac{\text{Missoula Incidence}}{\text{Missoula's Estimated Population}} \times 100,000$$

Example: 1979 figures

$$\text{Missoula Incidence Rate per 100,000} = \frac{275 \text{ Incidence}}{69,700 \text{ Estimated Population}} \times 100,000 = 394$$

$$\text{Montana Incidence per 100,000} = \frac{\text{Montana Incidence (total)}}{\text{Montana's Estimated Population}} \times 100,000$$

Example: 1979 figures

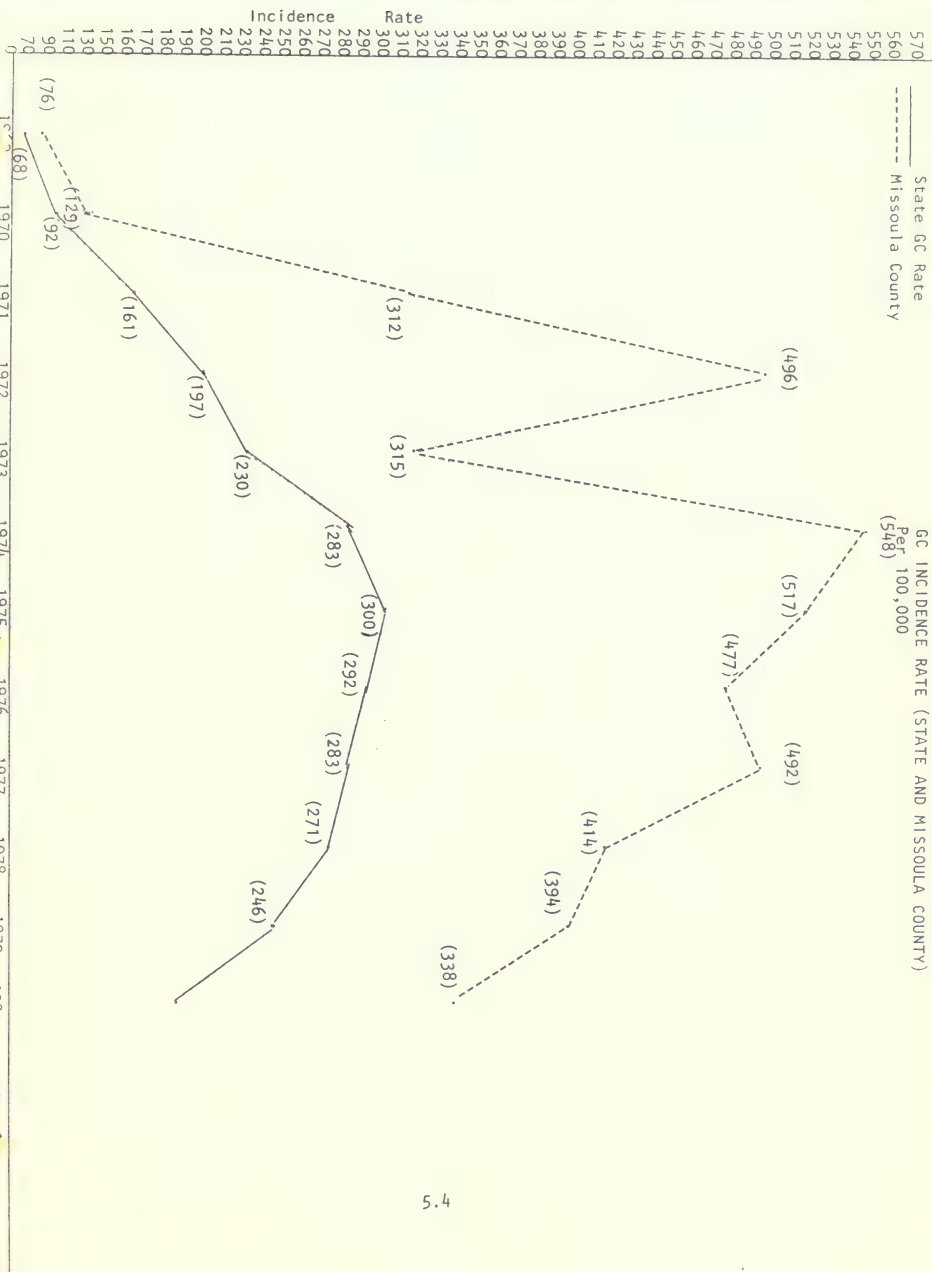
$$\text{Montana Incidence per 100,000} = \frac{1,934 \text{ Incidence}}{785,000 \text{ Estimated Population}} \times 100,000 = 246$$

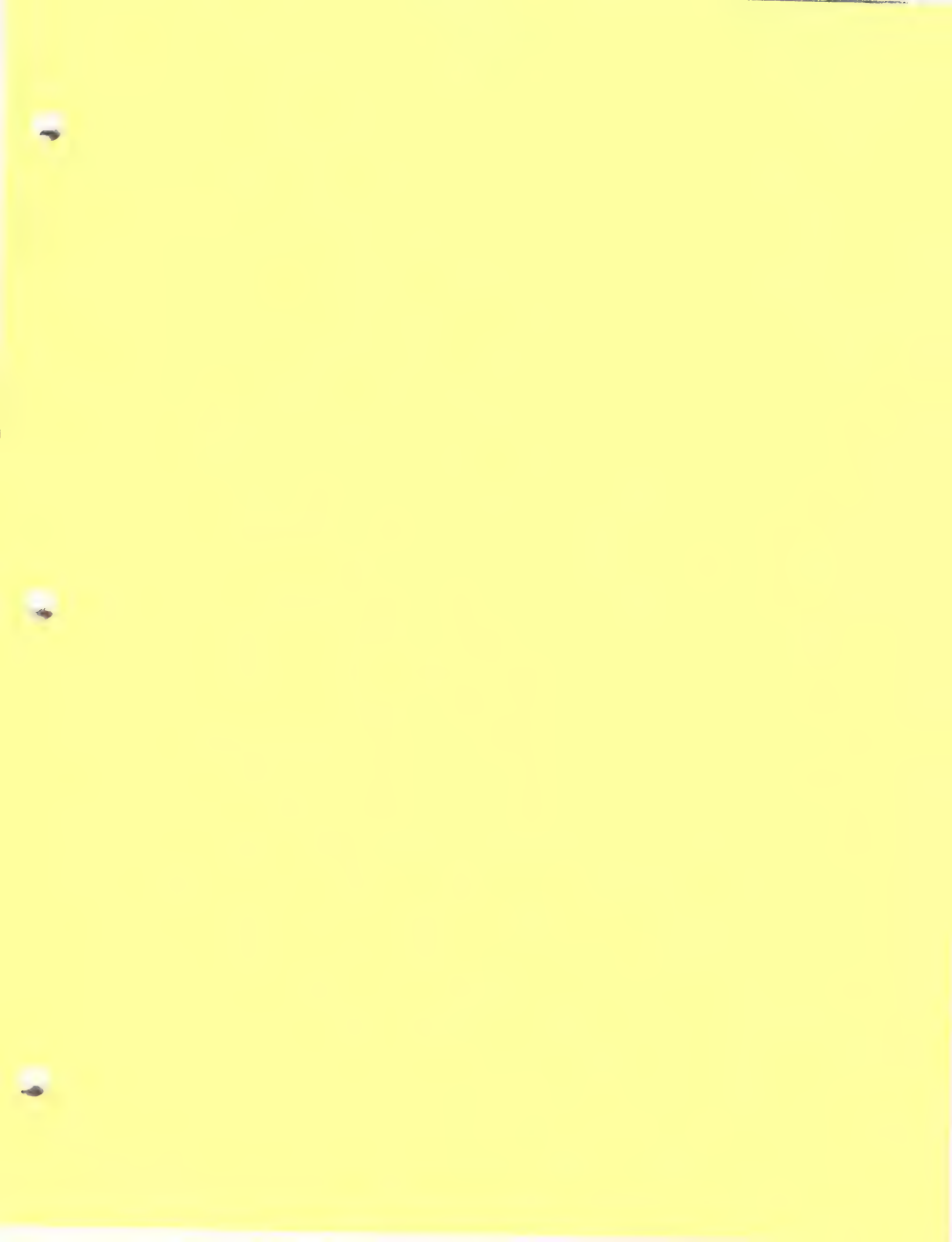
2. Rounding of Numbers: when rounding off a 5, always round to the even value.
Example: 3.5 = 4 4.5 = 4
3. An estimated population is used by the State Preventive Health Services Division. The population is taken from the Census figures, however; they will estimate a new figure every four years - use the State's population. This will give consistent and comparable year-to-year data.
4. Montana's population does not include the Military (Great Falls). Double check this every year. If they begin reporting the Military in the State's GC Incidence, it will need to be noted on the graph or the Military figures subtracted from the Incidence and Military population subtracted from the estimated population.

- including military

State GC Rate
Missoula County

GC INCIDENCE RATE (STATE AND MISSOULA COUNTY)
Per 100,000
(548)





SECTION 6

SEXUALLY TRANSMITTED DISEASE MODEL

Evaluation PlanIntroduction

Public health departments in Montana have been actively working to control sexually transmitted diseases (STD) since 1962. There are serious health consequences of gonorrhea, syphilis, herpes, chancroid and the other sexually transmitted diseases. Direct costs (control, treatment, and follow-up) and indirect costs (lost productivity to both society and patients) are high. For instance, in 1976 it was estimated that gonorrhea complications in women included 175,000 hospital admissions totaling 1.2 million hospital days.¹¹ Further, 1976 approximations show that \$60 million of tax monies are spent each year for the institutional care of patients with syphilitic psychosis.¹¹

Montana statistics show a steadily increasing number of cases of gonorrhea over the past decade from 473 reported cases in 1968 to 2126 reported cases in 1978.

It is generally agreed that the role of public health in dealing with the problem of STD is "PREVENTION AND CONTROL OF THE INCIDENCE AND SPREAD OF SEXUALLY TRANSMITTED DISEASES." Specifically, public health programs are concerned with minimizing the spread of STD, education of the public and health professionals, following-up cases, contact tracing, early case finding, reducing the medical complications of STD, reducing re-infection rates and operating STD programs as effectively and efficiently as possible.

Public health departments in Montana have long been interested in evaluating their efforts. Their desire for qualitative and quantitative data on which to base their program planning and to allocate resources was formalized with the approval of a two-year research evaluation grant between the State Department of Health and Environmental Sciences and the Missoula City-County Health Department, contractor for the evaluation project. The Missoula Health Department, responsible for developing evaluation models for eight public health programs, will develop and test evaluation models in Missoula, revise them as necessary, and then distribute "user guides" to local and the State Health Department for their use.

Literature Search

A search was conducted to find existing work on evaluation of public health STD programs. In addition, health professionals and experts in the field of sexually transmitted disease containment were consulted. A brief review of the results are as follows:

J. Condon, R. Greenfield, "Which Sexually Transmitted Disease Patients Default?"

Study of new STD cases attending a clinic in London which showed that the clinic influenced attitudes which the authors felt may influence attendance. They believe, however, that these results are related to social class or previous attendance at a clinic.

A. Hirsch, "Evaluation of Gonorrhea Control Efforts"

Author feels that the most important aspects of gonorrhea control are (1) provision of diagnostic and treatment facilities and (2) investigation of cases. He feels that culturing for gonorrhea has played a smaller role and impacts of education have been impossible to measure.

J. Hayes, J. Littlefield, "VD Knowledge in High School Seniors"

Study of 740 high school students which showed a 43% correct response rate to a test of knowledge of causes and origins of STD, symptoms and control therapy. Significant differences existed with more affluent schools scoring higher. Students know little specific information of how STD spreads, techniques for medical diagnosis and the health consequences of untreated STD.

*Journal of Practical Nursing
"VD - Controlling the Spread"*

Gives statistics on incidence levels, clinical symptoms, and reviews the current four methods used by public health officials to control the spread of STD -- partner counseling, partner follow-up, health education efforts and contact tracing.



N. Jermoluk, "Federal Efforts to Control Sexually Transmitted Disease"

Calls for the federal government to play a more important role in providing leadership and coordination for educational efforts on STD and more support to behavioral research on STD prevention, transmission.

J. J. Grant, "A New Approach to Gonorrhea Epidemiology"

Gives results of interviewing approximately 2,500 gonorrhea patients to determine relative effectiveness of identifying sex contacts and providing treatment for people in gonorrhea reservoirs. Shows the most effective category for discovering untreated cases is interviewing male volunteers at a cost of \$6.16 per new case brought to treatment. Calls for further study to determine if patient characteristics are factors in determining effectiveness and interviewing gonorrhea patients to discover new cases.

From this list and conversations with experts and health professionals, it is evident that little work is available to be used as reference for this evaluation project. This means that quantitative and qualitative evaluation will have to come from the systems designed in this project. Attempts will continue, however, to use other research as available.

Professional Contacts

Experts in the STD control field were contacted by letter or phone to review the purpose of the evaluation project and to ask for their comments and suggestions.

- Dr. Martin Skinner, Chief of the Preventive Health Services Bureau, Montana State Department of Health and Environmental Sciences.
- Rick Crankshaw, Montana Immunization Coordinator, State Department of Health and Environmental Sciences.
- Bruce DeSonia, Field Epidemiologist, State Department of Health and Environmental Sciences.
- K. Overfield, University of Sussex and Department of Genital Medicine, England.



- Steven B. Thacker, Bureau of Epidemiology, Center for Disease Control, Georgia.
- Others, CDC.

Local Health Department Administrators

Don Pizzini, Health Officer and Cherry Travis, Nursing Director, Cascade City-County Health Department, Great Falls, Montana.

Cited particular interest in incidence of STD among teens, and the efficacy of educational efforts.

Bob Johnson, Health Officer and Shirley McGuire, Nursing Director, Lewis and Clark Health Department, Helena, Montana.

Would like information on cost (diagnosis, treatment and follow-up).

David Feffer, Health Officer, Crystal Day, Nursing Director, Diana Anderson, RN, and Mary Taylor, RN, Missoula City-County Health Department, Missoula, Montana.

Reducing the number of repeaters, general prevention and cost were rated highest.

Bill Burke, Health Officer, Silver Bow Health Department, Butte, Montana.

SBHD refers STD patients to private facilities.

George Sheckleton, Health Officer and Jan Trembl, Nursing Director, Yellowstone County Health Department, Billings, Montana.

Concerns center around outcomes and reporting systems.

Edward King, Health Officer and Jackie Stonnell, Nursing Director, Gallatin City-County Health Department, Bozeman, Montana.

GCCHD refers STD patients to private facilities.

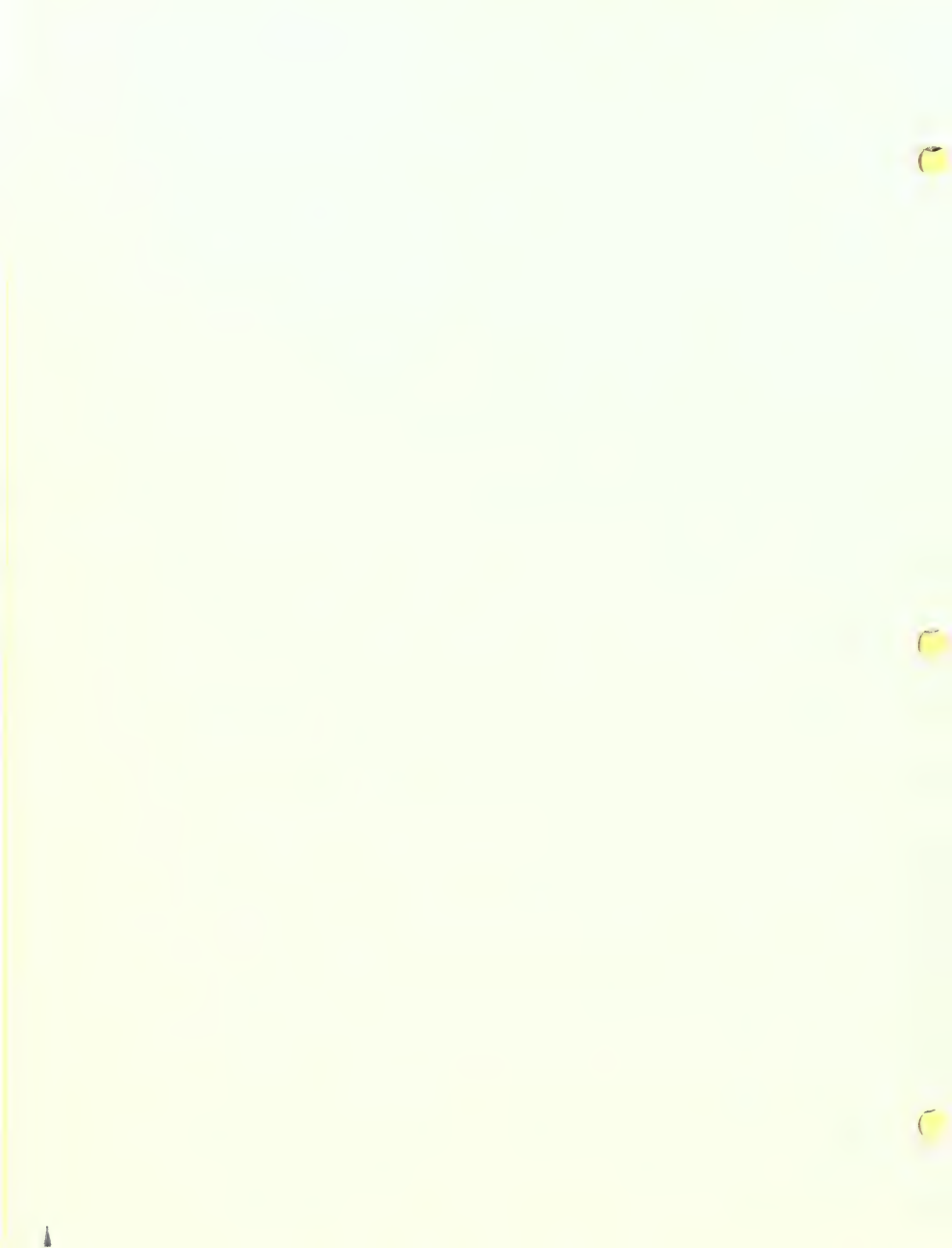
Bruce McIntyre, Health Officer and Audrey Gonzales, Nursing Director, Flathead City-County Health Department, Kalispell, Montana.

Cites problems of transient STD population and non-compliance to oral medications.

Close communication will be maintained with both local and state health departments as well as with experts as mentioned. Further sources of information and help will be sought.

Work to Date

The Missoula Health Department has done some preliminary work on determining costs of treating sexually transmitted diseases.



The FY 1979 Clinic Study showed the cost to the health department of providing an STD initial exam as totaling \$9.84 for females and \$9.58 for males. This cost includes supplies, personnel time and overhead. The study also placed the percentage of STD patients who did not pay for services at 29%. A time study of clinic users showed the average time STD patients waited to see a nurse was 22 minutes. Results of this study were: (1) the fee schedule for STD patients was increased to more accurately reflect cost to the health department, (2) clinic hours were changed to better utilize staff and (3) a partial payments system was instituted. With this work as a basis, the Missoula Health Department has planned to continue the data as a time series during FY 1980 and beyond.

Methods of Procedure

There are 13 generally recognized sexually transmitted diseases:

| | |
|----------------|--------------------------|
| gonorrhea | nonspecific urethritis |
| syphilis | herpes |
| chancroid | condyloma acuminatum |
| donovanosis | molluscum contagiosum |
| scabies | lymphogranuloma venereum |
| trichomoniasis | pediculosis |
| candidiasis | |

Gonorrhea takes a good deal of time by health professionals in Montana. Because procedures used in diagnosis, treatment, and location of contacts are comparable among the diseases, the STD Evaluation Model will use the disease gonorrhea as applicable for the evaluation model. The model will be designed so that it can be easily modified for use in evaluating other sexually transmitted diseases as needed.

Established program objectives will be used as research objectives. Meeting (or not meeting) the objectives then becomes the measure of a programs' effectiveness and efficiency. In other words, is the program meeting the over-riding goal of public health which is: PREVENTION AND CONTROL OF THE INCIDENCE AND SPREAD OF SEXUALLY TRANSMITTED DISEASES.



Objectives by Fiscal Year - 1.
(Missoula)

1. To provide complete diagnosis, treatment, and follow-up of all gonorrhea patients.
2. To achieve effective screening and treatment at an average cost of \$15 per person who comes in for gonorrhea.
3. To locate and get in to medical care 90% of reported gonorrhea contacts within 72 hours of report at a cost of \$20 per contact cited.
4. To reduce the incidence of gonorrhea repeaters from 4% to 2% of total gonorrhea patients.
5. To maintain a reporting system whereby cases of gonorrhea are reported to the health department within 48 hours of confirmation.
6. To actively provide STD information to the public at a cost to the health department of \$20 per hour.
7. To achieve a long-term decrease in the gonorrhea rate from 517 in 1975 to 346 in 1980.

Gonorrhea Evaluation Description

For purpose of clarification, definitions shall be as follows:

- patient = a person who seeks medical care for a disease or symptoms by coming in to a (public) health facility.
- contact = a person cited as exposed to a disease by a patient(s) (note: contact becomes a patient only when coming into health facility for diagnosis).

Because the general method used by public health in dealing with gonorrhea is to operate outpatient clinics, the evaluation model is designed for evaluating a STD clinic system staffed by public health nurses. The research evaluation will:

1. Provide a data base for planning and administrative decision-making.
2. Evaluate STD programs for effectiveness and efficiency.

Evaluation descriptions for each of the seven research objectives will follow the same format: (1) rationale for the established objectives will be discussed, (2) methodology will be detailed and explained, and (3) use of the data by administrators will be suggested.



Objective 1. To Provide Complete Diagnosis, Treatment and Follow-up of all Gonorrhea Patients.

Rationale - When patients come to STD clinics it is the accepted, but seldom quantified, goal to provide accurate and consistent diagnosis, effective treatment and complete follow-up. In order for public health to measure its success, mileposts such as this objective must be established and met.

For purposes of this objective, "complete diagnosis, treatment and follow-up of all patients" means (1) accurate diagnosis so that 85% of patients who actually have gonorrhea are diagnosed as such, and (2) complete treatment so that the patient is deemed to be medically free from the disease within a generally accepted seven days.

Methodology - Standardized Sexually Transmitted Disease Procedures will be developed as a means of formalizing the STD detection and treatment process. Each step will be listed from first seeing a patient to the test-of-cure and contact search. An outline form will be utilized so that personnel will be able to use it quickly and easily. For example --

I. Initial Visit

- A. If patient says he/she has gonorrhea or has been referred by contact then:
 1. explain confidentiality
 2. fill out VDRL form

Blanks will be left where appropriate (depending on laboratory facilities or reporting system, for instance) and users will be able to personalize the Procedures for their own specific use. The final form of the Procedures will be a three-ring notebook with plastic-encased pages. Space will be available for addenda as the user desires.

To measure use and effectiveness of the protocols, peer review will be utilized. The review will track use of each step of the protocols with emphasis on consistency in dealing with gonorrhea patients.

In addition, a small number of patients will be interviewed to see if they felt they received care as outlined in the protocols.

A patient survey will be administered to a statistically significant sample of STD patients to determine what type of person is prone to get STD and who comes to a public health clinic for help. The questionnaire will cover:

sex
age

dropped - 2
pages

residency (i.e., is the patient a transient)
education (i.e., is the patient a student and
from which level of school)
contact or new patient
STD knowledge/prevention/attitudes

Results from the questionnaire will show a profile of average patients, their levels of knowledge of spread of STD, its symptoms and prevention.

A direct measure of outcome will also be included in measuring attainment of Objective 1. Because the final measure of diagnosis, treatment, and test-of-cure is a disease-free patient, statistics will also be kept on the basis of:

| | | | | |
|-----------------|---|---------------|--|----------|
| | --> patient does not return for test | | --> does not receive further medication | |
| Test-of-cure--- | | --> fails --- | | --> fail |
| | --> patient returns for test --- | | --> receives further medication --- | |
| | --> field referral needed | --> passes 0 | | --> pass |

A running total can then be kept by quarter (or biannually or yearly) giving the percent of patients at each level of the matrix.

1. Patients passing test-of-cure () % total
first time () %
second time () %
2. Patients not passing test-of-cure () %total
not return to clinics () %
fail test-of-cure first time () %
fail test-of-cure second time () %

Use of Data - As a relatively simple and straightforward measure of use of STD protocols, the peer review will give managers information on consistency and thoroughness of clinic procedures.

As a way to better design STD programs and plan for coverage in clinics, data from the patient survey should be valuable. Used over several years, or as a time series, the questionnaire could give an idea of the changing levels of knowledge and prevention of patients.

As a means of outcome evaluation, the matrix and running total will give administrators up-to-date, measurable progress data from which they may gauge effectiveness. This evaluation measure would also be very helpful as a time series.

Objective 2. To Achieve Effective Screening and Treatment at an Average Cost of \$15 per Person who comes in for Gonorrhea.

Rationale - Cost information on services provided is often the most important data administrators can have. When budgeting, planning or applying for grant monies, accurate figures reflecting true costs are invaluable. Administrators who have accurate information on cost per STD screen and treatment can track changes in needs for resources and revenues.

Clarification - The term "effective treatment" for purposes of this objective will mean diagnosis of gonorrhea, medication, disease information and preventive counseling resulting in patients becoming free of gonorrhea within seven days.

Methodology - Assuming effective treatment (covered in Objective 1), cost data will be straightforward. A worksheet will be developed which lists all costs to the health department, both for all patients (all screened for gonorrhea) and those found to have gonorrhea and treated. Full definitions and parameters will be attached so that use of each cost is clear.

GONORRHEA SERVICES
HEALTH DEPARTMENT COST

| | # of Patients | Health Department Cost | # Patients Treated | Health Department Cost |
|---------------|------------------|---------------------------|-----------------------|------------------------------|
| 1. Personnel | | | | |
| hr x fringe | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ |
| 2. Facilities | | | | |
| _____ | _____ | _____ | _____ | _____ |
| 3. Supplies | | | | |
| _____ | _____ | _____ | _____ | _____ |

A more complicated model, or Levin Table, of the above worksheet will be developed for use by those who want to compute cost by including such factors as private contributions, imposed private cost and adjusted user charges (Appendix A).

Use of Data - The worksheet is easily compiled and the data can be broken out for use by category. Budgeting, writing grants or developing new fee schedules can necessitate use of quality and consistent data.

Missoula cost data will be made available to other health departments who want to use it on a comparison basis for not only the worksheet, but also the Levin Table.

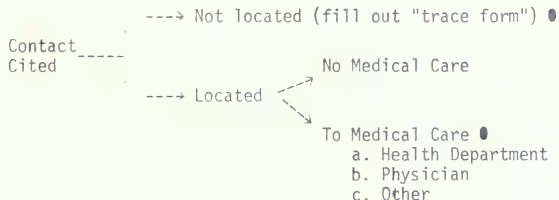
Objective 3. To Locate and get in to Medical Care 90% of Reported Gonorrhea Contacts within 72 Hours of Report at a Cost of \$20 per Contact.

Rationale - The cost of untreated gonorrhea was estimated to have been \$200 million in 1976.¹¹ Because of the enormous cost to society as well as the risk of infection and spread of the disease, public health has traditionally placed a high priority on locating and treating contacts. Because time is of the essence in contact tracing, a measurable objective of 72 hours has been established. Ninety percent was determined to be a good objective because of the importance of accuracy and thoroughness. Cost data is important to administrators who want to keep tabs on their costs and who need solid cost data for planning.

Methodology - A card on each contact will be started as reported. Clinic personnel can then track the steps to get a contact in to treatment. The methodology will look like this:

| Located | | | | | | | | | |
|---------|--------------------------|-------------|----|---------|-------|------|------|----|-----|
| Date | Name/address/description | Not located | HD | Patient | Other | Date | Exam | Rx | ER# |

The form will be filled out completely from left to right. A flow chart explains the process.



The resultant data will be in the form of a success rate (or $\frac{\# \text{ located} + \text{treated}}{\text{total}}$).

Cost data will be gathered by use of a similar procedure. For each step in the procedure, a cost will be assigned. For negative outcomes occurring where the contact is either not located or does not seek medical care, a cost figure will also be separately available. A worksheet will look like this:

| | Not Located | Located | |
|---------|-------------------------------------|--------------------------------------|---|
| Contact | Personnel time spent in attempt: | Personnel time spent in location: | time spent on follow-up of contact action |
| | a. phone _____ | a. phone _____ | |
| | b. personal tracing _____ | b. personal tracing _____ | |
| | c. other _____ | c. other _____ | |
| | Facilities: \$ | Facilities: \$ | |

Changed -
See P. 12

Use of Data - Both success rate and cost data focus mainly on personnel time. It should be noted that training, over-time and space for phoning or interviewing is also necessary for complete data. Data should be used over time for the success rate to accurately measure changes incurred by different methodologies and outside events. Costs of locating and of insuring the contact's seeking medical care will change over time as do personnel costs and new methodologies or training.

Objective 4. To Reduce the Incidence of Gonorrhea Repeaters from 30 to 20% of Total Gonorrhea Patients.

Rationale - Reducing the number of gonorrhea repeaters is a good way to measure effectiveness of patient counseling, public awareness programs and advertising campaigns. Public health would have a measure of success if ever it could say that it has reached a low repeater rate.

Methodology - Clinic nurses will be asked to include the question "Have you ever been treated for gonorrhea before?" as they interview patients on the initial examination. If the answer is yes, a list of quick questions will follow (such as "when were you treated?", "what preventive practices did you use to avoid getting gonorrhea again?"). Scores will be assigned to patients' responses and a final "risk score" will be used to indicate their being at-risk for getting the disease again. Dropped -
See Pa.

In addition, the STD patient questionnaire (Objective 1) will also cover individualism.

Use of Data - As a general measure of the size of the at-risk population, the patient questionnaire mentioned earlier and the short "quiz" will let administrators know the extent of the repeater problem. This data should also be kept from year to year in order to watch changes and trends over time.

Objective 5. To Maintain a Reporting System whereby Cases of Gonorrhea are Reported to the Health Department within 48 Hours of Confirmation.

Rationale - An unremitting problem of public health is the low rate of communicable diseases reported. It has been estimated that "private physicians who treat 80% of venereal diseases in the United States only report approximately 19% of their cases."⁵ If the true extent of the problem is unknown, then it is difficult for administrators to know how to allocate resources to impact the STD problem.

Methodology - Because of the lack of success with passive reporting systems, several variations of an active system will be tested for effectiveness. It is felt that passive systems, or waiting for physicians and labs to report on their own, have compounded the puzzle of not knowing the true scope of STD incidence. Active reporting, or actively contacting the medical community, is seen as the only way to maintain a grasp of true disease incidence.

As such, there are three options that will be tested as to their effectiveness. The first step for all three will be to interview several physicians, labs and emergency room personnel about reporting to get their input. Then all reporting sources will be divided into three groups for experimental purposes.

- Group I - will be called each Friday afternoon to ask for reportable diseases. A "Disease Incidence Form" will be drawn up for health department personnel use.
- Group II - will receive a "Disease Incidence Form" by Friday of each week with instructions to mail it back by Tuesday.
- Group III - will receive a pad of "Disease Incidence Forms" to keep on hand. By Friday, they will receive a post-card reminder to fill out the form and return it by Tuesday.

Change - see Pg. 11

There will be different levels of staff time and costs used for each of the three methodologies. A cost analysis will be drawn up for each, so that the final decision of which method is most effective will be also cost-effective.

Use of Data - An accurate and consistent reporting system will yield current disease outbreak information to not only public health, but also to area physicians if desired. This will fill legal requirements as well as give administrators an accurate measure of gonorrhea incidence in the county so that they may plan resource allocation and staffing patterns.

Objective 6. To Actively Provide STD Information to the Public at a Health Department Cost of \$20 per Hour.

Rationale - Prevention has always been an important part of the control of sexually transmitted diseases. Dissemination of good informational material has been long advocated by health educators.

An often cited problem has been social perceptions of STD:

...workers in the field of venereal disease prevention often face a double barrier; cases may not surface for treatment through lack of knowledge of symptoms, through embarrassment, through lack of willingness to cite sexual contacts, and through a complex of attitudes which render venereal diseases 'socially unacceptable' maladies. Further, education in this area has not found ready acceptance in the community. Thus, current cases are not identified, and potential cases are not given the awareness which would help them to protect themselves against infection, or to seek early treatment.²

It is a well-known phenomena in public health that when public information efforts are stepped up, the incidence of the disease goes up due to increased interest and reporting. It then becomes very difficult to quantitatively separate actual STD outbreaks from increased knowledge and reporting.

Outcome measures such as knowledge and attitude questionnaires and process measures like number reached, hours used and cost, are applicable, however.

Methodology - The methodology for the objective will cover health education and includes number reached, costs, knowledge and attitudes of patients and audiences.

Health education is a common preventive measure used by public health. Measuring the effectiveness of STD information as given to Out-Patient Clinic (OPC) patients and school children will involve a count of the number reached and what type of informational session it was as well as use of the questionnaire mentioned in Objectives 1 and 4.

Control groups will be used for school groups as well as clinics to assure that valid inferences are drawn from the questionnaire results.

Counting the number of people reached with STD information will be accomplished by results of an OPC time study. Results will then be used to establish average time spent on STD education to OPC patients. Health Department personnel who present STD information to schools or elsewhere will be provided with an "STD Information Time and Audience" card which will look like:

| STD Information-Time & Audience Card | |
|--|--|
| PHN/HE _____ | Date Presentation _____ |
| | To: _____ Number: _____ |
| <u>Time Spent</u> | Cost (will be filled in by Research Unit) |
| a. Research or data collection _____ : | _____ |
| b. Phoning and meeting arrangements _____ : | _____ |
| c. Actual session _____ : | _____ |
| d. Follow-up _____ : | _____ |
| Comments: _____ | |

Costs can be figured on the right side of the card.

Use of Data - Results from the time spent on STD information and number of people reached will be immediately of use to program administrators who need to know how many people their program meets and at what cost. The data from the questionnaire will determine how much clients and others receiving STD information understand the diseases and their prevention. That information can then be used to tailor future information and education efforts.

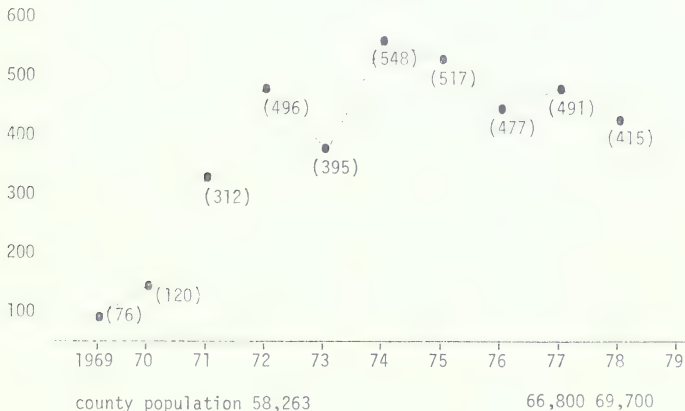
Objective 7. To Achieve a Long-Term Decrease in the Gonorrhea Rate from 517 in 1975 to 346 in 1980.

Rationale - The State Health Department puts out a gonorrhea rate - $\frac{\text{reported case}}{\text{county population}} \times 100,000$ each year. The easy availability of this data, as well as its being available since 1969, makes it the logical choice to use to measure trends and incidence of gonorrhea. Several cautions must be noted, however. First, the rate is calculated on estimated county population which could easily change the rate if an inflated (or underestimated) population were used. Second, the number of cases is only as good as the reporting system that gathers the data. If indeed a reporting system (Objective 5) is designed that is more effective than the old system, then the rate will change. Third, changes in the rate must be carefully attributed - was it public health's impact?, was it a change in reporting or advertising, or a STD "scare", was it decreased/increased carrier time from allowing each case to infect fewer/more others?, or was it another of the many outside variables?

Objective 7 was included to provide a distinct measure of either an increase or decrease in gonorrhea in a county. Because of the problems of measuring a change in the number of cases (we don't really know the number of cases, or people with the disease, because not all get diagnosed or treated) the states figures were chosen to be used.

Methodology - The State Health Department figure will be used as released in "Gonorrhea Incidence by County". Both a graph and table will be set up and updated yearly to determine changes in the rate. (If desired, a county may wish to maintain a monthly graph from monthly reported gonorrhea cases.)

GRAPH
Missoula County Gonorrhea Rate*



*cases reported per 100,000 population

TABLE
Missoula County Gonorrhea Incidence

| YEAR | NUMBER OF CASES | RATE | COUNTY POPULATION |
|------|-----------------|------|-------------------|
| 1969 | 44 | 76 | 58,263 |
| 1970 | 75 | 129 | 58,263 |
| 1971 | 182 | 312 | 58,263 |
| 1972 | 289 | 496 | 58,263 |
| 1973 | 230 | 395 | 58,263 |
| 1974 | 319 | 548 | 58,263 |
| 1975 | 301 | 517 | 58,263 |
| 1976 | 278 | 477 | 58,263 |
| 1977 | 328 | 491 | 66,800 |
| 1978 | 289 | 415 | 69,700 |
| 1979 | | | |

Use of Data - With proper and thorough analysis, gonorrhea trend information can be vitally important towards effective allocation of resources. If the rate (or even monthly incidence) has been consistently higher (after analysis of outside forces), then a way must be designed to combat that trend. If rates are consistently lower (after analysis of outside forces), then perhaps an impact has been made in the battle against gonorrhea.



Implications of STD Model

As stated earlier, the STD Model can be generalized to fit other health departments' needs and other sexually transmitted diseases (where this model fits gonorrhea only). The methodologies noted in each objective will be clearly laid out and generally, administrators can chose the level of data they require, whether it be comprehensive or unadorned.

Clear measurements are available in either meeting or not meeting the seven objectives. These, too, may be tailored to fit a particular department's needs. Missoula's final evaluation data will be made available to any administrator who would like to use it.

It would be very beneficial for the majority of the models to be continued from year to year (or quarterly, etc) as a time series in order to watch trends and establish baselines. After staff become familiar with the evaluation methodologies, this will be a very easy and quick process.

Publication of the methodology and results of this evaluation model must be considered. The extensive literature search for the model turned up very little of direct use, indicating a dearth of information on measuring the effectiveness and efficiency of public health programs nation-wide.

November 1979
Janice S. Hand

sp

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STD EVALUATION SUMMARY

| Instrument | Measures . . . | By . . . | Objective |
|---|---|--|-----------|
| STD Procedures | consistency, accuracy and effectiveness of clinic procedures | peer review/quality assurance measures | #1 |
| Patient Survey | type of person prone to get gonorrhea and come into clinic | age, sex, residency, education, contact, now patient, knowledge, prevention and attitudes. | #1 |
| STD Outcome Measures | outcome of patient treatment | 1. test of cure (pass on first time, second, etc.) 2. not pass test of cure (not return to clinic, fail first test of cure, etc.) | #1 |
| Cost Worksheet | gonorrhea costs to health department of (1) all gonorrhea patients and (2) gonorrhea positive patients. | cost table | #2 |
| Contact Section of STD Clinic Report (outcome success rate) | time period taken to get gonorrhea contacts in to treatment (72 hours) | use of STD Report form and success rate | |
| Gonorrhea contact cost data | actual cost of all gonorrhea contact work | time study on a sample of gonorrhea patients | |
| Repeator Risk Score | whether or not a gonorrhea patient is a repeator and knowledge of preventive measures | questions includes in STD Report form and score given to responses | #1 |
| Reporting System | levels of gonorrhea reporting | evaluation of three reporting systems | #2 |

| Public Information | getting gonorrhea/STD information to schools and patients and costs | Time and Audience Card | 26 |
|--------------------|---|--|----|
| Gonorrhea Rate | level of gonorrhea in county | use of state computed rate (rate per 100,000) | 27 |

USERS' GUIDE

FOR

PRENATAL EDUCATION
PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J. S. Hand) under contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE

Prenatal Education Program Evaluation

CONTENTS

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| Section 2 | .Program Costs |
| Section 3 | .Two-Month Follow-Up |
| Section 4 | .Original Evaluation Plan for Reference |



INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates five ways to evaluate your Prenatal Education Program — from class evaluations to a program cost analysis. The evaluation methodologies are a result of the two-year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The evaluation project's goal is to provide practical, efficient evaluation methods that public health administrators can use when evaluating their own programs.

Scope of Prenatal Education Program Evaluation - The evaluation methodologies shown in this Guide are designed to evaluate classes given to first-time parents but they could easily be revised to evaluate parenting classes as well.

Each methodology is designed to fit smoothly into your health department's existing programs and to produce clear and immediately useful data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's programs and data. You may need to modify some parts of the evaluation to fit your programs' features, or expand the evaluation to other types of classes.

Each section of the Guide shows Missoula's test results, discusses evaluation procedures, details evaluation methodologies and provides any forms used to collect data. Program cost analysis evaluation sheets and questionnaires are copy-ready.

Changes from Original Evaluation Plan - An evaluation plan is simply a brief outline of proposed work. When parts of the Prenatal Education Evaluation Plan proved infeasible, they were dropped or revised.

1. Evaluation Objective 1, Health Outcomes — Discussions with both program managers and State Maternal-Child Health authorities led to our conclusion that a health score is beyond the scope of this evaluation. The main reason for changing this evaluation methodology to a two-month follow-up is that there are so many exogenous factors influencing a mother's labor and her birth attitudes — from her education level to her family background to her physical capacities. A large scale research project, not a program evaluation of this size, would be required to meet this evaluation objective.
2. Evaluation Objective 2, No-Show/Dropout Survey — After conducting a telephone survey of no-show and class dropouts for six months, we found this type of survey was not cost-effective. Most of the respondents had moved, had unlisted phone numbers or had no phone. Staff time used to collect a relatively small number of respondents is prohibitive. The questionnaire is included in Section 1, page 8 for reference.



SECTION 1

FOR MORE EFFECTIVE CLASSES...

A. PARTICIPANT PROFILE

Results - The Profile Questionnaire gives class leaders the general background of their class. Generally, Missoula parents had never taken a prenatal education class before, did not have children at home, lived in two-person households, were 24 years of age or younger, and were probably female. The most commonly marked yearly income was less than \$10,999, and most respondents reported they had completed high school. When asked to list topics they would like to see covered in the classes, respondents were most likely to say "exercises." Results from this questionnaire helped staff effectively design their presentations toward participants' education level, their prior experience with classes or children, and their information desires.

Discussion - The questionnaire is easy to fill out and easy to tabulate. Question 1 asks about their having taken a prenatal education class before. This means any type of class and includes Lamaze or other types of prenatal classes they may be taking currently. Question 2 is intended to find out if respondents have any (other) children. Question 3 is a tactful way to get the number of single parents in the class.

Methodology - At the first session, briefly explain the questionnaire and ask class participants to fill out the Profile. Be sure to collect all questionnaires and tabulate as soon as possible so the class leader can review the survey results.

B. CLASS EVALUATION

Results - Class evaluation showed that participants generally best liked the classes covering labor and delivery, infant care, and exercises. They least liked classes covering anatomy and physiology. Results varied from class to class, however.

The Topics Questionnaire showed that participants felt the most important topics were nutrition, breast and bottle feeding, exercises, and labor and delivery. They were less interested in topics of assertiveness, wills, fetal growth and development, and family planning.

Discussion - There are two class evaluation forms (pages 1.5 and 1.6) presented in this evaluation. It seemed that if participants filled out the same form for each class, they got used to the form and began to skip through it quickly, giving less and less input from one session to another. Changing from one format to the other helped solve this problem. Also, stressing the importance of participant input will increase response.

The Possible Topics for Discussion Questionnaire should be tailored to fit your program and classes, so you may need to change the topics listed.

Methodology - Ask class participants to fill out an evaluation form before they leave each session, emphasizing the importance of participant evaluations. The short forms are easily tabulated and results are easy to analyze.

The Topics Questionnaire is most effective when the class leader stresses its use and asks the class to fill the form out at the beginning of the session. The form is easily tabulated.

C. ATTENDANCE

Results - The Missoula Health Department has been particularly concerned with increasing the number of fathers attending its prenatal education class. Attendance records show that the percent has increased from an average of 24% in 1980 to an average of 35% in the first half of 1981. Missoula has almost met its objective of increasing the percentage of fathers attending classes by 50% by January 1981 by an increase of 46%.

In addition, attendance records show the percentage of people attending at least five of the six sessions has increased from 24% to 50% from 1980 to 1981.

These results are due to (1) increased public service announcements, posters and newspaper coverage, (2) changes in class outlines to better meet participants' needs, and (3) group leaders no longer giving schedules of the classes so participants are less likely to skip "less interesting" sessions.

Discussion - Women who attend prenatal education sessions with their partners are more likely to complete the class than women who attend alone, so increasing the number of fathers attending is important. In addition, class costs are considerably higher if class participants sign up but do not attend classes, or if they drop out of the class. Making prenatal education classes efficient includes decreasing class no-show and drop out rates.

Methodology - Page 1.7 shows a suggested class registration form that can be filled out each session and then tabulated to give statistics on (1) number attending five or more sessions, (2) no-shows, (3) number of fathers, and (4) drop outs. To be useful, the attendance sheet should be completed each session, a separate listing shown for each father and the sheet should be compiled after each session and then results compared yearly.

PRENATAL EDUCATION PROFILE

Please take a couple of minutes just now to answer these questions. Your group leader will be able to design sessions that better fit your needs if she knows what type of people are in your group. Thank you!

1. Have you ever taken a prenatal education class before?
☐ yes -----> if yes, what type of class? _____
☐ no
2. Do you have any children at home now?
☐ yes -----> if yes, please write down each child's age _____
☐ no
3. How many people live in your household, besides yourself? _____
4. Please check your age range:
☐ under 15 years old
☐ 15-19
☐ 20-24
☐ 25-29
☐ 30-34
☐ 35 years or older
5. Are you:
☐ male
☐ female
6. What is your approximate yearly income, before taxes?
☐ less than \$5,000
☐ \$ 5,000 to \$ 7,999
☐ \$ 8,000 to \$10,999
☐ \$11,000 to \$13,999
☐ \$14,000 to \$16,999
☐ \$17,000 or over
7. Please circle the last year of school that you have completed:

| | | | |
|----------------------------|--|---|--------------------|
| <u>6</u> <u>7</u> <u>8</u> | <u>9</u> <u>10</u> <u>11</u> <u>12</u> | <u>13</u> <u>14</u> <u>15</u> <u>16</u> | <u>17</u> and over |
| GRADE | HIGH SCHOOL | COLLEGE | MS/PhD |
8. Please list any topics that you would particularly like to see covered in Prenatal Education sessions.



For Parents -- Possible Topics for Discussion

This survey is to find out what topics participants would like to discuss and explore. Please circle the number that most closely shows how much you would like to talk about each topic listed. "1" means not important to you and "5" means very important to you. List any other topics that you would like to see discussed at the bottom of the page.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| | <div>not important</div> <div>at all</div> <div>not too important</div> <div>so-so</div> <div>important</div> <div>very important</div> | | | | |
| a. How a Fetus Grows and Develops | 1 | 2 | 3 | 4 | 5 |
| b. Mothers' Body Changes During Pregnancy | 1 | 2 | 3 | 4 | 5 |
| c. Nutrition -- Mothers and Babies, Before and After Birth | 1 | 2 | 3 | 4 | 5 |
| d. Breast Feeding vs Bottle Feeding -- Advantages, Disadvantages & Breast Care | 1 | 2 | 3 | 4 | 5 |
| e. Exercises for Mothers -- Pre and Postnatal | 1 | 2 | 3 | 4 | 5 |
| f. Lamaze -- What Is It? Who Benefits? | 1 | 2 | 3 | 4 | 5 |
| g. Labor & Delivery -- What Choices Do Expectant Parents Have? | 1 | 2 | 3 | 4 | 5 |
| h. Infant Care -- At the Hospital and at Home | 1 | 2 | 3 | 4 | 5 |
| i. What Emotional Changes to Expect When Parents Take New Baby Home | 1 | 2 | 3 | 4 | 5 |
| j. Assertiveness and the Health Care Professional | 1 | 2 | 3 | 4 | 5 |
| k. Use of Cardio-Pulmonary Resuscitation on an Infant | 1 | 2 | 3 | 4 | 5 |
| l. Community Activities Available for Families and New Parents | 1 | 2 | 3 | 4 | 5 |
| m. Family Planning Options | 1 | 2 | 3 | 4 | 5 |
| n. The Caesarean Birth Experience | 1 | 2 | 3 | 4 | 5 |
| o. Providing for Baby -- Do Parents Need Wills? | 1 | 2 | 3 | 4 | 5 |
| p. Car Seats -- Do I Need to Have One? | 1 | 2 | 3 | 4 | 5 |

OTHER: _____



THANK YOU!

- mother
- father
- other

PRENATAL EDUCATION
PARTICIPANT INPUT

1. All in all, how useful to you were the topics covered in this session? (*circle one*)

3 2 1 0 1 2 3
very worthless
useful

2. Do you feel the way the group leader presented topics made them interesting and informative?

☐ yes, always ☐ no, not really
☐ yes, part of the time ☐ no, not at all

3. Which topic was least useful?

4. What did you think about the — film —
— chart —
— exhibit —
— *(circle one)* —
3 2 1 0 1 2 3
very worthless
useful

5. Your suggestions to improve the session:



11/80 15h

- mother
- father
- other

PRENATAL EDUCATION
PARTICIPANT INPUT

1. All in all, how useful to you were the topics covered in this session? (*circle one*)

3 2 1 0 1 2 3
very worthless
useful

2. Do you feel the way the group leader presented topics made them interesting and informative?

☐ yes, always ☐ no, not really
☐ yes, part of the time ☐ no, not at all

3. Which topic was least useful?

4. What did you think about the — film —
— chart —
— exhibit —
— *(circle one)* —
3 2 1 0 1 2 3
very worthless
useful

5. Your suggestions to improve the session:



11/87 15h

PRENATAL EDUCATION SESSION

1. All in all, how useful to you were the topics covered in this session? (Check one)

☐ extremely useful
☐ very useful
☐ fairly useful
☐ not too useful
☐ not at all useful

2. How much of the time do you feel the group leader presented topics in a way that made them interesting and informative? (Check one)

☐ 100% of the time
☐ 25% of the time
☐ 75% of the time
☐ not interesting or informative at all
☐ 50% of the time

3. What did you think about the ? _____

4. Which topic was least useful to you? _____

5. What recommendations do you have about improving this session?



THANKS FOR YOUR HELP!

PRENATAL EDUCATION SESSION

1. All in all, how useful to you were the topics covered in this session? (Check one)

☐ extremely useful
☐ very useful
☐ fairly useful
☐ not too useful
☐ not at all useful

2. How much of the time do you feel the group leader presented topics in a way that made them interesting and informative? (Check one)

☐ 100% of the time
☐ 25% of the time
☐ 75% of the time
☐ not interesting or informative at all
☐ 50% of the time

3. What did you think about the ? _____

4. Which topic was least useful to you? _____

5. What recommendations do you have about improving this session?



THANKS FOR YOUR HELP!

class leader

PRENATAL EDUCATION CLASS

Registration

[illegible]

jsh 6/81

PRENATAL EDUCATION CLASS

No-Show/Dropout Survey

Hello, Mr/Ms _____, my name is _____ from the Health Department. I'm calling to talk to you about the Education for Parenthood sessions that you were interested in. The Health Department has asked me to find out what people want from the classes and why some are not able to attend. Your answers are completely confidential. I'd really appreciate your help with the survey. First of all . . .

1. How did you first hear about Education for Parenthood classes?

- ☐ newspaper ☐ public health nurse
☐ friend or relative ☐ other: _____
☐ WIC

2. Do you currently have any children?

- ☐ yes ----- How many? _____
☐ no

3. Have you ever been to a prenatal education class of any sort before?

- ☐ yes ----- Which one? _____ Did you enjoy it? ☐ yes
☐ no ☐ no
Why not?

4. What sorts of things did you expect to learn when you signed up for the classes?

5. Why were you unable to go to Education for Parenthood Classes?

6. Why were you unable to continue going to Education for Parenthood Classes?

7. Do you feel there were too many people in the class?

7. Do you feel there were too many people in the class? ☐ YES ☐ NO
 Was the class too long for you? ☐ YES ☐ NO
 Was the location of the class good for you? ☐ YES ☐ NO
 Was the class held at a poor time of the day? ☐ YES ☐ NO
 Was parking a problem for you? ☐ YES ☐ NO
 Did you like to group leader (nurse)? ☐ YES ☐ NO

8. That's all I have. Do you have any general comments on the classes?

THANK YOU!

SECTION 2

PROGRAM COSTS

Results - The Missoula Prenatal Education Program cost \$3,790 in FY 1981. This cost included \$2,883 of personnel costs and \$865 for department overhead. The average cost per class participant (N=138) is \$27, based on the number of participants who came to at least one of the six sessions.

Discussion - Cost information is easy to collect and tabulate for prenatal education programs. Program costs are used for budgeting, planning and decision-making.

Methodology - Fill out a Prenatal Education Class Time Sheet (page 2.2) for each class taught. Using that data, the cost analysis is easy to complete. A detailed explanation of the analysis is printed on the back of page 2.5. A department overhead worksheet is also provided for the overhead percentage needed for Item 6.

PRENATAL EDUCATION CLASS

Time Sheet

For class _____ to _____

Group Leader _____

Class Background Time (scheduling, research, public relations, phone calls, etc.)

In-Class Time (actual time spent in class each night)

Mileage (if any - includes follow-up and client visits related to class)

Evaluation Time (evaluation of class - design, tabulation, analysis, etc.)

Class Wrap-up (time spent winding up the classes)

Keep time in quarter-hour increments - 15 min. shown .25.

OVERHEAD

Health Department Cost Analysis

The purpose of this cost worksheet is to provide a "formula" to be used to determine the overhead, or "cost of doing business," on a percentage basis so that overhead costs can be fairly allocated to each particular health department program.

1. Administrative Salaries

- a. Health Officer _____
- b. Administrative Assistant _____
- c. Administrative Secretary _____
- d. H.D. Receptionist _____
- e. H.D. Accountant _____
- f. Vital Statistics Clerk _____
- g. Medical Consultant _____
- h. Other: _____

x _____ (fringe)

_____ admin. salaries
(a)

2. Other Administrative Personnel Expenses

- a. Termination Reserve _____
- b. Recruitment _____
- c. General Conferences & Meetings _____
- d. General Training _____
- e. General Books & Periodicals _____
- f. Administrative Travel _____
- g. Other: _____

_____ other personnel
(b) expenses

OVERHEAD

Health Department Cost Analysis

Overhead is a factor designed to calculate the total costs of administering a program. It should be noted that overhead is an estimation of the health department's administration of all department programs, all of which overlap; hence, the need for an overhead figure.

Total Administrative Salaries

This means salaries plus appropriate yearly fringe benefits and merit raises of only personnel involved in the general administration of the health department. (Other personnel may be added if other departments are organized differently. For example, a health department personnel director or assistant health officer should be added to this category.) The receptionist is the person who acts for the entire health department, the general office clerk (or a portion of her/his salary) acts as vital statistics clerk.

To calculate (a), or total administrative salaries, multiply total salaries (which should include yearly raises) by yearly fringe percentage.

Other Administrative Personnel Expenses

"Termination Reserve" means those monies set aside to pay vacation and sick pay severance to employees who quit. "Recruitment" means costs budgeted for newspaper ads, printing and other costs of filling vacant positions. "Conferences and Meetings" refers to those of general interest to health administration and not applicable to a specific program. "Training" means general management or administrative training, not that attributable to a specific program. The "Books and Periodicals" category includes general health planning, public health, and management materials of general interest and not attributable to a specific program. "Travel" means general health department trips and excludes travel for specific programs or conference travel (to be included under "Conferences and Meetings"). Blanks are provided for other categories specific to the general administration of a health department. Add all these categories to get Total Administrative Personnel Expenses (b).

Other Administrative Expenses

Expenses in this category are those which are general to the running of an agency. Since it is virtually impossible to split out the number of pencils, pieces of paper and the like used by one program or activity, it is a good deal easier to include these as a total category and be able to easily allocate them in the department overhead computation. (The only exception to this would be grants where administrative expenses are each listed and funded separately and should be allocated as such.) Office supplies, copies and printing, postage, office equipment and phone are total costs per year for the whole department excepting grant allocations. Interest on warrants is interest paid on monies borrowed from a bank to cover current department operating expenses (if applicable). Other administrative expenses should be included in this category if they are attributable to the general operation of a department. (Note: It is more accurate and easier to charge vehicle expenses to the program which uses them on a cents-per-mile basis. It is also a good deal more difficult to charge phone, office space and the like out on a program-by-program basis.)

Building and Maintenance

Housing costs are to be included in the overhead computation because of the difficulty of allocating square footages, utilities, phones, etc., to each program or activity. This category should cover all housing expenses of the department and laboratory.

Other Expenses

This category should include costs of routine audits, administrative consultants, depreciation on capital, or other similar items.

3. Other Administrative Expenses

- a. All Office Supplies _____
- b. All Copies and Printing _____
- c. All Postage _____
- d. Office Equipment & Maintenance _____
- e. All Telephone Charges _____
- f. Interest on Warrants _____

_____ admin. expenses
(c)

4. Building and Maintenance

- a. Rent OR \$_____ per sq. foot
x number of sq. feet of office,
lab, etc. _____
- b. Maintenance _____
- c. Utilities _____
- d. Insurance _____
- e. Other: _____

_____ building and
(d) maintenance

5. Other Overhead Expenses

Other: _____

_____ other expenses
(e)

TOTAL OVERHEAD COSTS =

Overhead Computation = $\frac{a + b + c + d + e}{\text{total H.D. salaries + fringe}}$ = OVERHEAD (30%)

PRENATAL EDUCATION PROGRAM

Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the Health Department of conducting prenatal education classes.

1. PERSONNEL COSTS

a. group leader time x (salary + fringe) \$ _____

b. other personnel time x (sal. + fr.) _____

2. NURSING ADMINISTRATION COSTS

a. Nursing Director _____

b. Nursing Supervisor _____

c. Clerical _____

d. Other _____

_____ total personnel costs

3. MATERIALS

List: _____

4. MILEAGE @ ____¢/mi. _____

5. TRAINING, BOOKS, PERIODICALS

List: _____

6. OVERHEAD @ ____% of personnel costs _____

7. OTHER: _____

PROCEDURE

Prenatal Education Program Cost Analysis

Note: Each health department has its own system of tracking costs. This cost analysis, designed to provide a convenient method of determining program costs, can be changed to reflect your department's specific situation or cost accounting system.

1. **PERSONNEL COSTS:** There are three ways to calculate personnel time: (1) from a Prenatal Education Class Time Sheet, (2) from department time sheets, and (3) from estimates. Staff should include time they spend on the telephone and other less obvious costs in their time sheets. Multiply salary plus the fringe benefit percentage times the time spent on the classes to get personnel costs.
2. **NURSING ADMINISTRATION COSTS:** This category shows direct administrative costs which are the costs of directing and supervising the program. These costs can be calculated as a percentage (10% is a general estimate) of total program personnel costs if no better records are available.
3. **MATERIALS:** This category covers the cost of pamphlets, copies and other hand-outs. Use actual costs.
4. **MILEAGE:** If accurate records are not available, mileage can be estimated.
5. **TRAINING, BOOKS, PERIODICALS:** These should be only costs specific to the Prenatal Education Program. Costs which are general to public health should be allocated to department overhead (see Overhead Cost Analysis).
6. **OVERHEAD:** This category provides a way to include building, maintenance, and general health department administration (health officer, accountant, other administrative support) in program costs. See Overhead Cost Analysis Worksheet to determine department overhead percentage.
7. **OTHER:** Any other costs not covered in the above six categories.

FY 81
 actual
 ✓ estimated
 per ave's of records
 JH 6/16/81

PRENATAL EDUCATION PROGRAM

Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the Health Department of conducting prenatal education classes.

1. PERSONNEL COSTS

- a. group leader time x (salary + fringe) \$ 1358
 $\frac{6 \text{ classes}}{\text{per yr.}} \times 24 \text{ hr.} \times (8.13 + 1.30)$
- b. other personnel time x (sal. + fr.) 390
 hosp. tour (MIB) 6 x $\frac{4}{4} \times (7.49 + 1.20) = 209$
 Nutrit. class (H.A) 6 x $2 \text{ hr} \times (7.82 + 1.25) = 109$
 Breast Feed. (J.K.) 6 x $2 \text{ hrs} (5.14 + .82) = 72$

2. NURSING ADMINISTRATION COSTS

- a. Nursing Director 138
 $10 \text{ hrs/yr.} (11.91 + 1.90)$
- b. Nursing Supervisor 282
 $24 \text{ hrs/yr.} (10.11 + 1.62)$
- c. Clerical 715
 $6 \times 20 \text{ hr} \times (5.14 + .82 \text{ fr.})$
 classes
- d. Other — —

2883 total personnel costs

3. MATERIALS

List: misc. copies \$5/class
 pamphlets free

30

4. MILEAGE @ 20¢/mi. x 6 x 10 mi.

@ 10 mi./class x 6

12

5. TRAINING, BOOKS, PERIODICALS

List: none

—

6. OVERHEAD @ 30% of personnel costs (2883)

865

7. OTHER: —

—

6/81 jsh
 fringe @ 16%
 *139 ave class size of 23 x 6 = 338
 participants who attend to 21 class

2.6

3790 COST OF PROGRAM

@ 11/139/yr. = \$27/partur

SECTION 3

TWO-MONTH FOLLOW-UP

Results - An effort to complete the Two-Month Follow-Up study was unsuccessful. Problems of transient population, disconnected numbers, wrong numbers, and class length changes (from six weeks to four weeks), hindered the success of this study.

When the study began, most participants gave birth two months after the last session. Now, with four rather than six weeks of class and the request for participants pregnant through their fifth month, telephone survey problems are accentuated. For a successful Follow-Up study, it will help if the last class is taught within two months of the delivery date of class participants.

Discussion - One of the most important parts of a program evaluation is a measure of its outcome. The Two-Month Follow-Up appears to be the best way to measure outcome of the Prenatal Education Program. Although more accurate data is possible through thorough, longitudinal studies, they are outside the scope of this project and would, in any event, be very costly and time-consuming.

The Two-Month Follow-Up is designed to get feedback from past class participants about which parts of the class were and were not helpful now they have had their babies. The Follow-Up can find out if participants were unhappy with classes.

Methodology - Telephone follow-ups can be very difficult to conduct because people move or do not have phones, so it is particularly important to get good phone numbers and addresses during class registration.

During the interview, (1) be sure to establish rapport with the respondent by being businesslike, pleasant and answering all the respondent's questions, (2) read each question exactly as it is written, or you could bias your results, (3) probe, or say "anything else?" on the open questions (#3, 4, 7) to be sure you have all the respondent's answers, and (4) record the respondent's comments verbatim — do not try to put them in your own words.

The sample size should be everyone you can reach. Please recognize that the major weakness of this type of phone survey is that you will not reach a highly transient population or those without a telephone. This does introduce a certain amount of bias into your survey.

Respondent Data
 ___ C-section
 ___ induced labor
 ___ breast feeding
 ___ bottle feeding

Two Month Followup
 Prenatal Education Class Participants

Hello, Mr/Ms _____, I'm _____ from the Health Department. Several months ago, you took an Education for Parenthood Class from the Health Department. Now that you've had your baby, we're contacting you and others in your class. We'd really appreciate your help with a short survey. First of all . . .

1. Was this your first baby?
☐ yes
☐ no ---> Including this baby, how many children do you have? _____

2. Did you take other prenatal education classes, other than Education for Parenthood?
☐ yes---> Which classes did you take? _____
☐ no ---> Do you wish you had taken other classes, too? ___ yes---> which classes? _____
 ___ no ---> why do you say that? _____

3. Thinking back to all the Education for Parenthood sessions, which session or topic has proven to be the most useful to you?

4. Which session or topic could have been left out?

5. Now that you've had your baby, how useful were the classes covering:

| | | | | |
|---------------------------------------|----------------|--------|------------------------|---------------|
| | very useful | useful | not real- ly useful | not useful |
| a. Labor and Delivery | 1 | 2 | 3 | 4 |
| b. C-Sections? | 1 | 2 | 3 | 4 |
| c. The Hospital Tour? | 1 | 2 | 3 | 4 |
| d. Breast/Bottle Feeding & Nutrition? | 1 | 2 | 3 | 4 |
| e. Prenatal Relaxation Exercises? | 1 | 2 | 3 | 4 |
| f. Infant Care? | 1 | 2 | 3 | 4 |

6. Do you believe the Education for Parenthood classes should have taught more or covered more topics than they did?
☐ yes---> What topics would you have liked covered? _____
☐ no

7. What other comments do you have to help improve the classes?

8. The Health Department is considering offering infant care classes which would cover topics like babies' growth and development at different stages, babies' nutritional needs, and how to know when to go to the doctor when your baby is sick. If sessions like that were offered, would you be interested in attending?
☐ yes---> What other topics would you like to see offered? _____
☐ no ---> Why do you say you wouldn't be interested? _____

THANK YOU FOR YOUR HELP!

JSH/slp
 4/81

 Interviewer/Date

SECTION 4

PRENATAL EDUCATION EVALUATION PLAN

The increased interest in prepared childbirth in the United States has grown rapidly since the Lamaze method came into use approximately 20 years ago. Prenatal classes, usually taught by public health departments, medical facilities or sponsored by community groups, have become a common offering to parents in many communities.

In Montana, public health nurses have been teaching Prenatal Education classes (sometimes called Education for Parenthood classes) for at least two decades. Currently, 43 of Montana's 56 counties offer prenatal classes. Many are taught by public health nurses on a voluntary basis and all follow the State Health Department's recommended "discussion method," whereby parents and parents-to-be are encouraged to actively participate in class discussions and not just sit and listen to lectures by "experts". The courses are generally open to anyone in the community without charge.

Few evaluation studies have been conducted on a nation-wide basis and none in Montana since prenatal education classes began. Public health's interest in relevant evaluation data upon which to base program decisions has grown, resulting in approval of the Community Health Services Evaluation Project in 1979. The project is designed to provide evaluation methodologies and data for eight public health programs in Montana. The Missoula City-County Health Department, as per its contract with the State Health Department, is responsible for developing evaluation models for eight public health programs, testing the methodologies, refining them as necessary and then distributing "user guides" to the State and local health departments for use in their internal evaluations. The Prenatal Education Model will be designed so that health departments may use all or parts of the methodologies to construct management data on their courses.

Literature Search

After conducting an extensive literature search and talking with maternal-child health experts, it is evident that little other evaluation work is available for use as background in designing this evaluation. A review of the few relevant works follows:

Smith, D., Smith, H.
"Toward Improvements in
Parenting." ³

Describes a pilot program developed at an urban community hospital designed to strengthen classes for new and expectant parents. Results from a project survey indicate that parents' knowledge of child development did improve considerably as a result of the parent education project.

Twinn, E., Fry, L.R., et. al.,
"Childbirth Education Evaluation:
The Indianapolis Experience." ⁵

Describes a data collection system designed to evaluate a childbirth education program's performance and to plan for future growth. Data was gathered on client origin, source of referral, labor and delivery experience and an instruction and class evaluation.

Watson, J.
"Who Attends Prepared
Childbirth Classes?" ⁴

Study compiled a socioeconomic profile of parents attending prepared childbirth classes. Results show that parents were generally well educated, 28 years or older, heard of the classes through word of mouth or by their physicians and are employed in professional, technical or managerial occupations.

The scarcity of relevant background material made input from authorities particularly important to this evaluation. Efforts will be continued to gather applicable studies and information throughout the project. The following people were consulted for input for the evaluation:

- David Feffer, Health Officer, Crystal Day, Nursing Director, Missoula City-County Health Department, Missoula, Montana.
- Don Pizzini, Health Officer, Cherry Travis, Nursing Director, Cascade City-County Health Department, Great Falls, Montana.
- Edward King, Health Officer, Jackie Stonnell, Nursing Director, Gallatin City-County Health Department, Bozeman, Montana.
- Bruce McIntyre, Health Officer, Audrey Gonzales, Coordinator of Nursing, Flathead City-County Health Department, Kalispell, Montana.
- Bob Johnson, Health Officer, Shirley McGuire, Nursing Director, Lewis and Clark Health Department, Helena, Montana.
- George Sheckleton, Health Officer, Jan Treml, Deputy Director, Yellowstone Health Department, Billings, Montana.
- Bill Burke, Health Officer, Silver Bow Health Department, Butte, Montana.
- Fay Sweeney, Maternal-Child Health Nursing Consultant, Maternal-Child Health Bureau, State Department of Health and Environmental Sciences, Helena, Montana.
- Marlene Garvis, Hennepin County Medical Center, Minneapolis, Minnesota.
- Betty Tableman, Michigan State Health Department, Lansing, Michigan.
- Kathryn Barnard, Professor of Nursing, University of Washington, Seattle, Washington.

METHODS OF PROCEDURE

The goal of the Prenatal Education Program is to insure a healthy outcome for parents and infants — mentally, emotionally and physically — through understanding pregnancy, labor and delivery, and infants' growth, development and behavior — by participating in prenatal education courses.

It has been said that:

Every day thousands of people embark on one of the most difficult of all endeavors — parenthood. Most couples are caught unprepared for the realities of this new phase of development and education programs that discuss the problems of living with an infant on a 24-hour basis are not widely available.³

The Prenatal Education Program, designed to help interested parents prepare for prenatal/postpartum processes and parenting, is based largely on the philosophy that parents' knowledge of their children's development is a large factor in influencing parent-child interactions. The courses offer information on nutrition, breast and bottle feeding, exercises for the pregnant woman, the labor and delivery process, infant care, and often, a hospital tour.

Although prenatal education courses have gained general wide-spread support and acclaim, there have been few evaluation studies of the program's effectiveness. Program managers have expressed concern about the types of parents who attend and whether or not public health is indeed reaching those who most need the information (low socioeconomic, teen and first-time parents) and if not, how to reach high-risk parents. In addition, administrators need to know if parents who attend prenatal education sessions actually show different behaviors and understanding than do parents who have not had prenatal education.

Evaluation objectives were established to provide specific measurements of the prenatal education program's effectiveness. Each objective and its evaluation procedure can be easily modified to fit individual health department needs. For example, the percentage and date in Objective 2 can be changed to fit other health department needs.

Each objective will follow the same format: (1) the rationale for each objective will be discussed, (2) its methodology will be detailed and explained and (3) the use of data by administrators will be suggested.

Objectives*

1. TO DEMONSTRATE BETTER HEALTH OUTCOMES FOR MOTHERS WHO HAVE PARTICIPATED IN THE PRENATAL EDUCATION PROGRAM THAN DEMONSTRATED BY MOTHERS WHO HAVE NOT ATTENDED PRENATAL EDUCATION SESSIONS.
2. TO REDUCE COURSE NO-SHOW AND DROPOUT RATES BY 40% BY JANUARY 1987.
3. TO EFFECTIVELY MEET PARTICIPANT INFORMATION AND SUPPORT NEEDS THROUGH PRENATAL EDUCATION COURSES.
4. TO INCREASE THE NUMBER OF FATHERS ATTENDING COURSES BY 50% BY JANUARY 1987.
5. TO DETERMINE THE COSTS OF PROVIDING PRENATAL EDUCATION COURSES.

Objective 1 To demonstrate better health outcomes for mothers who have participated in the prenatal education program than demonstrated by mothers who have not attended prenatal education sessions.

Rationale - This objective is to answer the bottom-line evaluation question "What does public health accomplish by offering prenatal education sessions"? To a large extent, the Prenatal Education Program has been run on faith, never knowing whether or not the program does have an impact.

Methodology - Working closely with experts in the maternal-child health field, a system will be designed to fit as closely as possible into existing at-risk scoring methods. A score will be given to mothers who (1) have and (2) have not attended prenatal education sessions, based upon their general reactions to labor and delivery, and including their infants' birth weights, length of stay in hospital, father's participation in labor and delivery, early mother-infant interactions, etc.

Scores will be compared for those who went through prenatal education and those who did not, in order to determine if a statistically significant difference does indeed exist.

Use of data - Results from this survey will provide effectiveness data to program managers who need to know if their program is having an impact on mothers' behaviors. With this information, administrators will have a solid basis upon which to effectively allocate personnel and program monies.

Note: Italics indicate that percentages and dates may be changed to reflect individual health department needs.

CHANGED - SEE SECTION 3

Objective 2 To reduce course no-show and dropout rates by 40% by January 1987.

Rationale - A considerable scheduling problem can occur when course registrations fill up, and only half of the potential participants actually come to their sessions. Similarly, participants who drop out during the six week course are taking places that could have been used to reach more people. In exploring reasons for both no-shows and dropouts, courses can be better designed to efficiently serve as many people as possible.

Methodology - Careful record of course sign-up and attendance will be kept in order to provide baseline data against which to measure changes. To determine participants' reasons for non-attendance, phone surveys will be conducted to determine (1) why those who signed up for prenatal education did not come at all and (2) why participants missed two or more sessions.

The survey will be designed to get information such as: number of children currently in the family, how parents learned about prenatal education, and more specifically, why they did not attend, what they expected from the sessions, if they notified the Health Department that they would not attend and if they think they would be interested in prenatal education later.

Other experiences with no-show surveys have shown that the type of people who fail to show for appointments and clinics probably do not have a phone in service and/or are probably transient. Although other similar surveys have been successful in determining needed information, it has taken considerably longer than surveying a "normal" population.

Use of data - Program managers who have information on failure to show rates will then be able to change sign-up procedures and/or course design to best deal with their particular situation. For example, if the no-show rate is consistently 40%, then it would be efficient to over-schedule by 60% for each series of courses.

Objective 3 To effectively meet participant information and support needs through prenatal education courses.

Rationale - Initial measurements of satisfaction have shown that there are some parts of the standard course outline that a high percentage of participants do not like (family planning, for example). Further development of satisfaction measures will show other parts of the courses that can be expanded or reduced.

DROPPED -- SEE PAGE 2

SECTION I (b)

Methodology - Two questionnaires will be used, the first to determine course participant interests and the second to evaluate participant satisfaction with the course as a whole.

The course interest survey will give a list of possible topics of interest to new parents and ask respondents to rate the importance of the class on a five-point scale. Initial work with this type of survey has shown excellent results.

The second survey, the participant evaluation, will ask Prenatal Education course participants their views about the classes they just completed -- how they found out about the program, what they liked best and least about the course, how they rated specific topics and sociodemographic information.

Use of data - Interestingly, some topics considered by public health nurses to be important to parents have been shown to receive a low priority by course participants. Those topics are fetal development, the reproductive system and family planning. Knowing what participants want from courses will help planners to design sessions that attract and hold parents' interest.

Objective 4 To increase the number of fathers attending courses by 50% by January 1987.

Rationale - Preliminary investigation indicates that when fathers attend Prenatal Education classes with their partners, there is a direct correlation with participant completion of the six-week course. In addition, in this day and age, fathers are more and more readily accepting responsibility for parenting and are wanting more information.

Methodology - Attendance sheets will be kept to record who signs up for each six week session, how many sessions they attend and whether or not both partners come. These records will be particularly valuable in tracking the success of efforts to increase father participation, such as special public information and use of course materials especially emphasizing fathers.

Use of data - More study is needed to determine if increasing father participation also increases course-long attendance by women as well. Experiments showing the most effective manner of accomplishing this goal can then be used by other health departments.

Objective 5 To determine the costs of providing Prenatal Education courses.

Rationale - Cost data is cited as one of the most important parts of the Community Health Services Evaluation Project. A clear and practicable method of determining actual costs, both direct and indirect, will make accurate data available to all program managers.

Methodology - The cost determination will closely follow those constructed for the other evaluation plans. Those worksheets include costs of personnel, equipment and materials, travel, training, books and periodicals, division indirect costs and health department overhead costs. A complete explanation of the methodology is part of the worksheet to insure consistency.

Use of data - Efficient allocation of resources and staff time depends on knowledge of program costs and how those costs compare with costs of other programs. The cost worksheet will provide data in a readable and replicable manner.

Implications of Prenatal Education Evaluation

The Prenatal Education Evaluation Plan is intended to be used by health departments to meet their individual data needs and is designed to be a general evaluation of a public health program that may vary from department to department. Missoula's final evaluation results will be made available to any health department who would like to use the data for comparison or reference.

The evaluation methodologies are designed to be continued from year to year in order to track changes and give yearly comparison data. As staff become familiar with the evaluation procedures, use of employee time will diminish.

Because of the limited amount of existing work on prenatal education program evaluation, consideration should be given to publishing this evaluation, opening the way to further efforts and hopefully, contributing to the state-of-the-art.


J S Hand
M.C.C.H.D.
5/80

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USERS' GUIDE

FOR

HOME HEALTH PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J.S. Hand) under contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE
Home Health Program Evaluation

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INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates five ways to evaluate your Home Health Program - from a new home health nursing audit to a survey of health professionals who refer to home health care. The evaluation methodologies are a result of the two-year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The evaluation project's goal is to provide practical, efficient evaluation methods that public health administrators can use when evaluating their own programs.

Scope of Home Health Program Evaluation - Each evaluation methodology is designed to fit smoothly into your health department's existing programs and to produce clear and immediately useful data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's programs and data. You may need to modify some parts of the evaluation to fit your program's features, or expand the evaluation to other types of similar services.

Home health evaluation is complicated by the nature of the program. Evaluation measures such as patient satisfaction surveys can be unsatisfactory because they are subjective. Evaluation measures like cost comparisons tend to be incomplete because they cannot measure such psychological benefits as patients being able to live in their own homes and maintain a measure of independence.

Each section of the Guide shows Missoula's test results, discusses evaluation procedures, details evaluation methodologies and provides any forms used to collect data. The nursing audit and referral survey are copy-ready. The evaluations are to be used in conjunction with Medicare time/cost studies and other required federal evaluations.

Changes from Original Evaluation Plan - An evaluation plan is a brief outline of proposed work. Several parts of the Home Health Evaluation Plan proved to be infeasible, so were dropped and other parts were changed. Two other evaluations were added.

1. Evaluation Objective 1, Referral Log - Changed. We felt that separate (original plus carbon) referral records were more efficient. The original copy can be routed to the appropriate nurse and the copy can be kept in a file for later analysis. A log would contain a record of all calls also, but it would not provide a copy for the nurse.
2. Evaluation Objective 2, Patient/Family Survey - Found ineffective. We tried two types of surveys - the first was sent to each discharged patient or their family, if the patient was unable to complete the questionnaire (through death or disability). This type of survey took so long to produce results that we dropped the idea and instead tried a questionnaire

sent to all current patients. While this type of survey worked considerably better, it also proved to be ineffective. The main problem with the second survey was poor response to several individual questions and a marked reluctance of patients to give constructive criticism. See full report on Page iii.

3. Evaluation Objective 4, "Average Patient Profile" — Dropped. Further discussions with home health administrators showed that they felt the information from Objective 4 would be nice, but not really useful. Medicare cost reports are felt to be adequate information.
4. "Alternate Service Survey" added (Section 2).
5. "Palmore's Facts on Aging Quiz" added (Page ix). It is interesting to administer this questionnaire to home health staff to measure their knowledge and attitudes toward the senior citizens. Both quiz and answers are included.

TO: Jean Pinsoneault, Home Health Supervisor
Crystal Day, Health Services Director

FROM: Janice Hand, Research Specialist *Janice Hand*

RE: Results of Home Health Patient Survey

DATE: March 12, 1981

Summary

Results of the Home Health Patient Survey primarily show that 50% of patients surveyed asked for more information, especially on diet and nutrition, how to live with their condition, and understanding their medications better. Patients also said that they would use various in-home services, if the services were available (transportation, visiting services, homemaker, etc., are currently available). Sixty-nine percent of the respondents said that the quality of home health services was excellent. In general, I am not happy with the results of the survey: results are largely inconclusive, some questions are plagued by a high no-response rate and few respondents wrote constructive comments.

Survey Methodology

This methodology is a revision of the first survey attempt where we surveyed home health patients (or their families) after their cases had been closed. That attempt failed because we didn't get enough questionnaires back in the survey time period.

The new methodology reported here surveyed all patients receiving home health care during the first week of January, 1981. Seventy-six questionnaires were sent out and 52 were returned. After adjusting for the 10% (or, approximately 7) whom we estimated were in no physical or mental condition to fill out a survey form, the return rate is 75%, an excellent response for a mail survey.

Results - Home Health Patient Survey

1. If home health had not been available, what other care would you have used?

- 12% hospital
- 13% nursing home care
- 4% day care or homemaker
- 15% visit doctor more often
- 33% none
- 13% other

(10%) no response

Generally, respondents mentioned friends, live-in help or concerns with money if they had been unable to receive home health care.

Analysis: This question is comparable to the Physician Alternative Care Survey (1980). Results show different perceptions between what doctors would order for alternative care and what care patients felt they would have used:

| | Physician Alternative Service Survey | Home Health Patient Survey |
|------------------------------------|---|-------------------------------|
| Hospital | 7% | 12% |
| Nursing home care/rest home | 42% | 13% |
| Day care or homemaker/live-in help | 20% | 4% |
| Visit doctor more often | 29% | 15% |
| None, made do | 2% | 33% |
| Other | 0% | 13% |
| (No Response) | (0%) | (10%) |

Because the two sample sizes are very similar (n=52 and 69, respectively), and the two questions were asked the same, you may directly compare results. Patients would prefer to avoid nursing or rest home care, live-in help, and visiting their doctor more often in favor of making do or making other arrangements. The differences between patients' and doctors' perceptions of what other form of care they would prefer to use are striking.

2. Some patients have said they'd like to get more information about certain topics. Please mark any topics you would like to have more information about.

- 35% don't feel they need any more information
- 15% improving nutrition and diet
- 18% living with their condition better
- 11% understanding their medications
- 10% other (most comments asked for more information about nutrition and diet, response 2)
- (11% no response)

Analysis: Fifty-four percent of respondents asked for more information, compared with 35% who felt they didn't need any further information. This result is significant because it is a clear indication that many patients are not receiving enough information and are asking for information related to their health: how to better live with their condition, improving their nutrition and diet, and understanding their medications better. Research in communication and learning shows that verbal presentations alone result in approximately 20% recall or recognition over several weeks, but verbal plus visual reinforcement leads to 40% recall. Then, if verbal, visual and reinforcement (or re-introduction of the topic) is used, there is a 60% recall. This research indicates that pamphlets, worksheets, information outlines and the like could be solutions to problem pointed out by Question 2.

3. Please check any services you are not receiving now, but would use if available.

- 15% rides to do shopping, errands, and see the doctor
- 2% delivered hot meals
- 3% radio reading services
- 11% friendly visiting services
- 6% physical or speech therapy
- 3% nursing care not covered by home health
- 10% homemaker to help with cleaning, shopping and chores
- 8% other (these comments were unrelated and no conclusions can be drawn)
- (42%) no response

Analysis: Patients said their prime needs are for transportation, friendly visiting services, and homemaker services, all of which are in-home services currently offered in Missoula. The extremely high no-response rate is probably due to the number and length of responses and the visual image of a long column of boxes. I'm very disappointed in these results.

4. All in all, how would you describe the quality of home health services?

- 69% excellent
- 23% good
- 6% poor
- 0% very bad

Analysis: Rocheleau and Mackesey pointed out in their article "What, Consumer Feedback Surveys Again?" (in Evaluation and the Health Professions, December 1980), that most clients, an average of 75%, tend to be satisfied with services. They point out that failure to get a reasonable satisfaction level of 70-75% is an indication that a problem exists with the agency's programs. With that argument in mind, the 69% response to excellent quality of home health services could be improved. Unfortunately, the questionnaire does not provide any answers to where the quality of home health services should be improved.

5. We try to make home health an effective program, but realize improvements are always possible. Please help by making suggestions to improve home health services.

Respondent Suggestions: *"Sometimes the woman who comes once a week to go shopping is sick - they should have a back-up. So far though there has not been a problem."*

"Our older people need more qualified nurses to look in on them from time to time - although _____ is a darling."

"Mental health counseling."

"Well, if I just had lots more of the money so I could buy needed things around the place it sure would be lovelier living around here."

"An emergency nurse - to call day or night. I'm paraplegic and sometimes have accidents in bed and need help cleaning up."

"More range in help at home."

"I sure do wish I could get my medical and food stamps cause I will be dead shortly if they don't do something to help me."

5. (cont.)

Respondent Suggestions: *"If the nurse could come more often."*

"I am irritated because I can't drive anymore and do need transportation monthly to the doctor."

Respondent Compliments: *"My part, I have no improvements. I think you are doing fine for me and my sister."*

"As of to date it's excellent."

"We appreciate the help you offer so we can get away and don't have any new ideas at this time. Just keep up the good work you are providing."

"I think home health services is a fantastic program. I am very pleased with it."

"I don't know, I'm satisfied as it is."

"I'm perfectly satisfied with the services I am receiving."

"I am 80 years 5 months in age. For my condition I am receiving visits from Home Health nurses which I could not do without. The care I receive is excellent and friendly. I don't know how I could make it if it didn't exist. Thank you. My ailments are stroke, neuro demitius and age."

"Very pleased with the program. Our nurses are excellent. Also have enjoyed working with Dr. McCarthy."

"_____ has been an angel, we love her, she is very good at her work and shows a lot of loving care to everyone. _____ is a very special lady and excellent nurse."

"Highest praise for work done by _____ and _____. Not only what they do, but their cheerful and encouraging attitudes."

"_____ was very pleasant and considerate."

"From all the good I have heard, how pleased I am as a whole, at this time I could not make good suggestions. It is a wonderful, wonderful program and God Bless and thank you all."

5. (cont.)

Respondent Compliments: *"I don't see that they can be improved."*

"I think your services are wonderful and your nurses are, too. Please excuse my mistakes. I am so nervous. I enjoy your visits."

"OK so far."

"The nurses are so helpful and pleasant and have helped me so much dressing that wound and helping with my bath. I really don't know what I would have done without them."

"Everything OK."

Analysis: These comments primarily center around asking for more services and perceiving the nurses as helpful, cheerful, encouraging, etc., but only one mention was made of their professional status and role.

Survey Recommendations

Although the survey does give some good information, I'm not happy with it. The survey shows that we were right to keep the survey short and easy to complete, but even then, the no-response rate to Question 3 is very high. The survey doesn't give complete information to questions it raises: why did 31% of the respondents give quality of home health care a lower than "excellent" rating? How should quality be improved? In retrospect, I do not recommend that mail surveys be used for home health program evaluation. I believe personal or phone interviews would have been much more effective.

PALMORE'S (1977) FACTS ON AGING QUIZ

- T F 1. All five senses tend to decline in old age.
- T F 2. The majority of old people feel miserable most of the time.
- T F 3. Most old people have no interest in, or capacity for, sexual relations.
- T F 4. Physical strength tends to decline in old age.
- T F 5. Most older workers cannot work as effectively as younger workers.
- T F 6. In general, most older people are pretty much alike.
- T F 7. The majority of old people are socially isolated and lonely.
- T F 8. At least one-tenth of the aged are living in long-stay institutions (i.e. nursing homes, mental hospitals).
- T F 9. Old people usually take longer to learn something new.
- T F 10. The majority of old people are seldom bored.
- T F 11. The reaction time of most older people tends to be slower than the reaction time of younger people.
- T F 12. The majority of old people (past age 65) are senile.
- T F 13. Lung capacity tends to decline in old age.
- T F 14. Aged drivers have fewer accidents per person than drivers under age 65.
- T F 15. About 80% of the aged are healthy enough to carry out their normal activities.
- T F 16. Most old people are set in their ways and unable to change.
- T F 17. It is almost impossible for most old people to learn new things.
- T F 18. Older workers have fewer accidents than younger workers.
- T F 19. Older people tend to become more religious as they age.
- T F 20. The health and socioeconomic status of older people, (compared to younger people in the year 2000) will probably be about the same as now.
- T F 21. Over 15% of the U.S. population are now age 65 or over.
- T F 22. The majority of older people have incomes below the poverty level (defined by the Federal government).

FACTS ON AGING QUIZ (cont.)

Page 2

- T F 23. Most medical practitioners tend to give low priority to the aged.
- T F 24. The majority of old people are working or would like to have some kind of work to do including housework and volunteer work.
- T F 25. The majority of old people are seldom irritated or angry.

PALMORE'S (1977) FACTS ON AGING QUIZ

ANSWERS

1. T
2. F
3. F
4. T
5. F
6. F
7. F
8. F
9. T
10. T
11. T
12. F
13. T
14. T
15. T
16. F
17. F
18. T
19. F
20. F
21. F
22. F
23. T
24. T
25. T

SECTION 1

NURSING AUDIT SPECIALLY DESIGNED FOR HOME HEALTH PROGRAMS

Results - The new home health audit tool replaces a general nursing audit formerly used by the Missoula Home Health Agency and many others in Montana. The new audit has been tested and revised after being used during a regular audit of first quarter 1981. The audit summary showed that of audited records, 55% were rated excellent, 18% good, 18% fair and 9% were rated poor.

Discussion - We sent out inquiry letters to approximately 120 home health agencies around the country and received about 50 audit forms to review. A group of home health administrators, supervisors, nurses and an evaluator reviewed each audit and found that the basic Phaneuf model was the most complete. Although the Phaneuf's major fault is that it does not cover nursing care specific to home health services, the group felt that it held the most promise for revision.

The audit was revised to insure that it (1) completely covers all measures of nursing quality found in the "usual" home health case; (2) measures both quality of nursing care and quality of reporting and recording; (3) reflects the basic ideology of home health care (promote independent living for patients); (4) is easily interpreted consistently by all auditors; and (5) gives points only when it can be clearly proven from the record that a nursing action took place.

Methodology - The audit form is to be completely filled out, keeping the basic philosophies above in mind. The audit methodology should follow Medicare requirements, just as with the other audits.

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

HOME HEALTH AUDIT

This data must be held in STRICT confidence and must not be filed with patient's record.

PART 1 - To be completed by clerk.

| | | | | |
|--------------------|-------|-----|---------------|------------------|
| Patient Name/Last | First | Age | Date Admitted | Date Discharged |
| Nursing Agency | | | | Number of Visits |
| Complete Diagnoses | | | | |

Was patient hospitalized immediately prior to home health care?

- ☐ yes → number of days _____
☐ no
☐ unknown

Referred by:

- ☐ discharge planner ☐ patient's family
☐ self ☐ other: _____
☐ doctor _____

Discharged to:

- ☐ self-care ☐ family-care ☐ hospital ☐ died ☐ other agency ☐ unknown
☐ Other: _____

PART 2 - To be completed by nursing audit committee.

Record reflects service as:

- ☐ excellent (224-204) ☐ good (203-183) ☐ fair (182-162) ☐ poor (161-141) ☐ very poor (≤ 140) ☐ record does not permit evaluation

Audit Committee Comments:

Auditor's Signature _____

D. CAREPROVIDER(S) SUPERVISED AND COORDINATED

| | YES | NO | DNA | COMMENTS |
|--|-------|----|-----|----------------------|
| 1. Patient and/or careproviders demonstrated appropriate care as taught by RN. | 5 | 0 | 5 | _____ |
| 2. RN had considered patient's and/or careproviders' physical, emotional and mental capacity to learn. | 5 | 0 | 5 | _____ |
| 3. RN rendered physical and emotional support of patient and/or careproviders during learning process and provision of care. | 5 | 0 | | _____ |
| 4. RN continued supervision of care and procedures taught. | 5 | 0 | | _____ |
| 5. RN coordinated services by RN, Aide, LPN, and other careproviders. | 5 | 0 | | _____ |
| 6. Need for community resources evaluated, referrals made as appropriate, and follow-up documented. | 5 | 0 | 5 | _____ |
| | TOTAL | | | <input type="text"/> |

E. REPORTING AND RECORDING

| | YES | NO | COMMENTS |
|--|-----|----|-------------|
| 1. Record shows pertinent communication with doctor. | 2 | 0 | _____ |
| 2. Patient or careproviders alerted about information to be reported to doctor. | 2 | 0 | _____ |
| 3. Care plan completed, updated, and clear. | 2 | 0 | _____ |
| 4. All entries dated and in chronological order. | 2 | 0 | _____ |
| 5. Record legible and signed by RN, indicating approval of content. | 2 | 0 | _____ |
| 6. Periodic reassessment and nursing care plan revised as appropriate. | 2 | 0 | _____ |
| 7. Patient-family/support relationship described. | 2 | 0 | _____ |
| 8. SOAP method of recording appropriately used. | 2 | 0 | _____ |
| 9. Discharge summary included: -date open -referral source -major problem -intervention -patient condition at discharge -reason for termination of service -date closed | 2 | 0 | _____ |
| TOTAL | | | <div></div> |

F. PROCEDURES AND/OR NURSING JUDGMENT AND TECHNIQUES APPLIED AND EXECUTED

| | YES | NO | DNA | COMMENTS |
|---|-----|----|-----|----------------------|
| 1. RN reviewed, administered, and/or supervised medications. | 4 | 0 | | |
| 2. RN assigned and careproviders showed appropriate attention to patient's personal care needs. | 4 | 0 | | |
| 3. Nutrition noted and nursing intervention as indicated. | 4 | 0 | | |
| 4. RN acted to prevent complications and infections. | 4 | 0 | | |
| 5. Elimination noted and nursing intervention as indicated. | 4 | 0 | | |
| 6. Rest and sleep noted and nursing intervention as indicated. | 4 | 0 | | |
| 7. Physical activity noted and nursing intervention as indicated. | 4 | 0 | | |
| 8. Results of urinalysis, vital signs, or other tests by RN documented. | 4 | 0 | | |
| 9. Patient care treatments, results and evaluation documented. | 4 | 0 | | |
| 10. Equipment and medical supply use documented. | 4 | 0 | 4 | |
| TOTAL | | | | <input type="text"/> |

G. PATIENT'S SELF-CARE AND/OR INDEPENDENT LIVING PROMOTED

| | YES | NO | DNA | COMMENTS |
|--|-----|----|-----|----------------------|
| 1. Patient and/or careproviders have plan for medical and environmental emergency. (Call 911). | 7 | 0 | | |
| 2. RN prepared patient to evaluate own signs and symptoms for self-referral to appropriate medical provider as necessary. | 7 | 0 | 7 | |
| 3. RN prepared careproviders to evaluate patient for referral to appropriate med. care as necessary. | 7 | 0 | 7 | |
| 4. RN taught patient and/or careproviders appropriate preventive health practices. | 7 | 0 | 7 | |
| 5. RN taught patient and/or careproviders appropriate use of community resources to lead to increased level of patient's independent living. | 7 | 0 | 7 | |
| TOTAL | | | | <input type="text"/> |

| A | B | C | D | E | F | G | TOTAL |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

MISSOULA CITY-COUNTY HEALTH DEPARTMENT/HOME HEALTH AGENCY

HOME HEALTH NURSING AUDIT

_____ date

Number of Records
Reviewed . . .

Record does
not permit
evaluation

Excellent

Good

Fair

Poor

Very Poor

Overall Evaluation
by Number of Cases . . .

Evaluation by Nursing
Function and Number
of Cases

Record does
not permit
evaluation

Excellent Good Fair Poor Very Poor Total

- A. Doctor's orders applied and executed.
- B. Signs, symptoms and reactions observed.
- C. Patient care supervised.
- D. Careprovider(s) supervised and coordinated.
- E. Reporting and recording.
- F. Procedures and/or nursing judgment and techniques applied and executed.
- G. Patient's self-care and/or independent living promoted.

| | | | | | | |
|--|--|--|--|--|--|--|
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Directions:

Using the scoring system below, assign each function of each record to the appropriate category. The results will give you an overall audit summary and weak and strong areas will be more apparent.

| Function | Excellent | Good | Fair | Poor | Very Poor |
|----------|-----------|-------|-------|-------|-----------|
| A | 25 | 20 | 15 | 10 | 5-0 |
| B | 48-41 | 40-33 | 32-25 | 24-17 | 16-0 |
| C | 28 | 24 | 20 | 16-12 | 8-0 |
| D | 30 | 25 | 20 | 15 | 10-0 |
| E | 18 | 16-14 | 12-10 | 8-6 | 4-0 |
| F | 40 | 36-32 | 28-24 | 20-16 | 12-0 |
| G | 35 | 30 | 25 | 20-15 | 10-0 |

SECTION 2

"ALTERNATE SERVICE SURVEY"

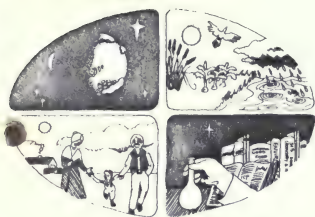
Results - The Home Health "Alternate Service" study shows that if home health services had not been available, physicians would have wanted (in order of preference): (1) extended or more frequent office visits, (2) nursing or rest home care, or (3) live-in help for the patients the survey covered. From April, 1979 to May, 1980, a short survey was mailed to physicians with routine requests for doctor's orders, asking about their patients on home care. Results of the survey indicated physicians preferred home health care to extended or more frequent office visits or nursing/rest home care.

Discussion - The survey was conducted to find out what services doctors would have ordered if home health care had not been available to their patients already on home health care. The survey, then, does not find out why doctors chose home health care instead of alternate forms of care and should not be interpreted for long-term or intermediate care patients in general, but for home health patients only.

Methodology - Because physicians are notorious for their aversion to paperwork, we used only a very short form (page 2.4). The survey form plus a letter of explanation was enclosed in home health agency requests for doctor's orders. Mid-way through the survey period we mailed each participating physician a letter asking them to please continue to help with the survey (page 2.6). When the survey was completed, each physician received a short feedback report (page 2.7).

The survey is easy to administer and equally easy to tabulate. A full report is shown on page 2.2 and all forms and letters are included.

August 18, 1980



...MAKING A DIFFERENCE...

Home Health
Alternate Service Report

Summary

The Home Health "Alternate Service" study shows that if home health services had not been available, physicians would have wanted (in order of preference): (1) extended or more frequent office visits, (2) nursing or rest home care, or (3) live-in help for the patients included in the survey. From April, 1979 to May, 1980, a short survey was mailed to physicians asking about their patients on home care. Results of the survey indicated, for those patients in the study, physicians preferred home health care to extended or more frequent office visits or nursing/rest home care. This survey will be followed by personal interviews with physicians, discharge planners and others to determine how many and what type of patients are not referred to home health care and why.

Purpose of Study

A good many studies have been done to determine the cost-effectiveness of home health care, but no studies are available to answer another question — "If home health had not been available, what alternative service would have been needed by the patient?" The answer to that question gives an idea of alternate care patterns, as well as whether diagnoses or time needed on long-term care was a factor in choosing home health.

Methodology

For physician convenience, a half-page form was designed to be quickly and easily completed by only two checkmarks. The form, attached to all new patient care orders along with a short letter explaining the study, asked physicians to check one of seven categories of alternate care. (For form, see attached.)

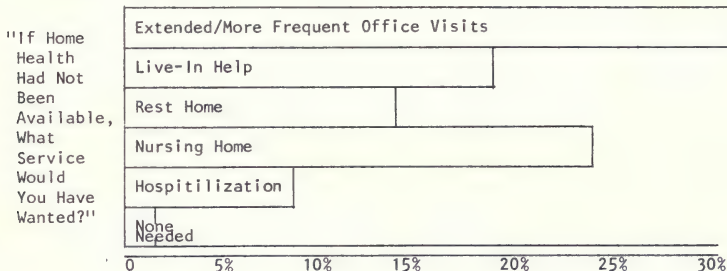
MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

Half-way through the study, a letter was mailed to physicians thanking them for their help, giving some preliminary results, and asking for their continued cooperation during the study. The return rate, fairly consistent throughout the study, was 56%.

Results

Results were tabulated in two ways to show results per patient and per response because some survey forms showed more than one of the seven categories checked. Sixty eight survey forms were returned.

In order of preference, extended or more frequent office visits, nursing home, live-in help, rest home, and hospital care were cited as services that would have been ordered if home health care were not available. Lengths of time needed for the alternate service as reported by physicians varied from "one more office visit" to "an indefinite period" of time (all forms of care but hospitalization).



When diagnoses were grouped and examined for length of service and type of service, no conclusions could be drawn that patients with certain diagnoses were referred to home health or would have been on alternate forms of services for any set period of time.

Conclusions

This study showed, of those cases where physicians preferred home health care to other forms of care, home health was preferred over five other forms of services. The study does not explore reasons why other patients were not referred to home health care (control group). Another survey is planned to determine why some patient are referred to home care and others are not.

J. S. Hand
J.S. Hand
Research and Evaluation

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 WEST ALDER STREET

MISSOULA, MONTANA 59801

RE: your patient _____

Please answer with the patient's condition in mind as of today _____.

If Home Health Services had not been available, what
service would you have wanted for this patient?

- ☐ hospitalization estimated length of time _____
- ☐ nursing home estimated length of time _____
- ☐ rest home estimated length of time _____
- ☐ live-in help estimated length of time _____
- ☐ extended/more frequent office visits estimated length of time _____
- ☐ none needed estimated length of time _____
- ☐ other; please explain _____ estimated length of time _____

THANK YOU!

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 WEST ALDER STREET

MISSOULA, MONTANA 59801

RE: your patient _____

Please answer with the patient's condition in mind as of today _____.

If Home Health Services had not been available, what
service would you have wanted for this patient?

- ☐ hospitalization estimated length of time _____
- ☐ nursing home estimated length of time _____
- ☐ rest home estimated length of time _____
- ☐ live-in help estimated length of time _____
- ☐ extended/more frequent office visits estimated length of time _____
- ☐ none needed estimated length of time _____
- ☐ other; please explain _____ estimated length of time _____

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 WEST ALDER STREET

MISSOULA, MONTANA 59801

*Letter sent out with each
"Alternative Service" survey form.*

Your help with the attached question is important to the evaluation and improvement of home health services in Missoula County. The results of this ongoing study will benefit both patients and health care professionals through constant monitoring of our home health activities.

We ask only that you see that this short form is completed and returned to the Health Department with the patient's care plan. You should receive this blue form each time you refer a patient to us.

If you have any questions, please feel free to call.

Sincerely,

Janice S. Hand
Research Specialist

JSH/j
Encl. HH Question



...MAKING A DIFFERENCE...

December 14, 1979

*Letter sent out mid-way
through the survey period.*

Your continued help in completing the "Home Health Alternative Service" form (sample attached) has been instrumental in providing important data for planning our services.

The survey is approximately three-quarters complete and we anticipate it ending in March, 1980. Please continue to complete the forms and return them with the patient care plan as you have been doing. You will receive a copy of the results summary when it becomes available.

We appreciate you helping us in this survey — we are pleased to be able to examine our program in order to be able to serve you and your patients better. If you have any questions or comments about Home Health care, please call us at 721-5700, extension 357.

Sincerely,

Crystal Day, RN, FNC
Director of Nursing

cd/JSH/j
attachment

MISSOULA CITY-COUNTY HEALTH DEPARTMENT
301 WEST ALDER STREET MISSOULA, MT 59801
TELEPHONE 721-5700

August 20, 1980

Report to
Participating Physicians

TO:

FROM: Crystal Day, RN, FNC, Nursing Director *CD*
Janice S. Hand, Research Specialist

RE: Home Health Alternate Service Report

As promised, here is a copy of the "Home Health Alternate Service" report based on data that you and other physicians provided by completing the "Alternate Service" form (copy below).

The report shows that, if home health services had not been available, physicians would have wanted - (1) extended or more frequent office visits, (2) nursing or rest home care, or (3) live-in help - for their patients surveyed.

Thank you - your help led to the success of the Home Health Alternate Service study. We appreciate your input.

TELEPHONE 721-5700, ext. 363

RESEARCH AND EVALUATION UNIT

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 WEST ALDER STREET

MISSOULA, MONTANA 59801

RE: your patient _____

Please answer with the patient's condition in mind as of today _____.

If Home Health Services had not been available, what service would you have wanted for this patient?

- ☐ hospitalization estimated length of time _____
- ☐ nursing home estimated length of time _____
- ☐ rest home estimated length of time _____
- ☐ live-in help estimated length of time _____
- ☐ extended/more frequent office visits estimated length of time _____
- ☐ none needed estimated length of time _____
- ☐ other; please explain _____ estimated length of time _____

THANK YOU!

SECTION 3

REFERRAL SURVEY - PHYSICIANS AND DISCHARGE PLANNERS

Results - The single most important conclusion that can be drawn by the Referral Survey is that physicians do not fully understand home health care. There appears to be a strong need for a comprehensive public relations program with physicians, their nurses, other agencies and the public to acquaint them with not only home health services, but other types of in-home services. The survey also shows that physicians and discharge planners overwhelmingly felt there is a need for the home health agency in Missoula. Respondents said that continuity of care, health teaching for independent living and skilled nursing care were the most important and useful services offered by home care.

The Missoula Home Health Agency used the information from this survey to revise their public service announcement program and to plan a forum for physicians and other health care professionals to inform them of home care available in Missoula.

Discussion - Because physicians and hospital discharge planners refer the majority of home health patients, they were the survey population. The survey was administered to three groups of doctors - (1) a sample of those who refer often, (2) a sample of those who refer at times, and (3) a sample of physicians who do not refer patients to home health care. Discharge planners from all three Missoula hospitals were surveyed.

To insure a good response and complete results, the survey should be administered by personal interviews. If your department does not have an experienced survey interviewer to conduct the survey, we recommend that you hire one. Personal interviews are difficult to conduct effectively when responses are subjective, as they are in this survey. The interviewer must know when to tactfully probe for more information if a respondent hesitates or looks doubtful.

Surveys like this one have the additional benefit (other than information) of involving physicians and discharge planners with the program and opening avenues of communication with the health department.

Methodology - Each interview took approximately 15 minutes. We telephoned each respondent's office for an appointment and briefly explained the purpose of the visit. At the beginning of the interview the surveyor fully explained the survey and its purpose and stressed that the respondent's answers must be frank in order for the survey to be useful.

The following are important points to follow to insure an accurate survey:

1. Sample Size - Optimally, you should interview all discharge planners, doctors who refer often, doctors who refer at times and doctors who do not refer at all. If that is impossible, select the largest sample it is possible for you to do. (Missoula's survey covered 15 respondents.)

2. Interviews - Be prompt; you are using some of the respondent's business time. Establish rapport before starting the survey — this will help insure honest and frank responses. Read each question exactly as it is written to insure that responses are based on consistent questions from interview to interview. Be sure to probe any answers where the respondent hesitates or seems to have more to say. Thank the respondent for his/her time at the end of the survey.
3. Tabulation - The survey is fairly easy to tabulate, although it will be important to carefully categorize responses to open questions (1,2,4,7,9,10) to reflect respondent's actual comments.

TO: Jean Pinsoneault
Home Health Nursing Supervisor

FROM: Janice S. Hand *Janice S. Hand*
Research Specialist

DATE: February 17, 1981

RE: HOME HEALTH REFERRAL SURVEY

Summary

The single most important conclusion which may be drawn by this survey is that physicians do not fully understand home health care. I believe there is a strong need for a comprehensive public relations program with physicians, nurses, other agencies and the public to acquaint those groups with not only the Health Department's Home Health Agency and its function, but also other available in-home services.

Other results show that respondents (both physicians and discharge planners) overwhelmingly feel there is a need for the Home Health Agency, but are less certain (7 to 6) that there is a need for increased or expanded services. The most important service offered by home health is seen as continuity of care and the most useful services to patients are health teaching for independent living and skilled nursing care. Professional home health nursing care was rated "excellent" by the vast majority of respondents.

Methodology

Because physicians, who made up 70% of the surveyed population, generally do not respond well to either mail surveys or phone interviews, we used a personal interview methodology. The advantages of personally interviewing doctors and hospital discharge planners in their offices are control of the questionnaire, insuring all questionnaires are answered, hesitations are probed, and the importance of the research is underscored by making a personal visit to the medical professional in his or her office.

Four groups of medical professionals were interviewed: (1) doctors who refer to Home Health often and consistently, (2) doctors who refer sometimes, (3) doctors who do not refer at all, and (4) hospital discharge planners at the three local hospitals. Most referrals come from either doctors or discharge planners. (A separate Home Health patient survey is currently being completed which will

show patient satisfaction about their own home health care.)

The questionnaire we used was designed to determine:

1. The Missoula Home Health Agency's perceived place in the medical care system.
2. How the decision to refer/not refer is reached.
3. Importance and usefulness of services to doctors and discharge planners, as well as to the patients.
4. If medical professionals or patients have had any unresolved problems with the Home Health agency.
5. Quality of professional nursing care.
6. Ways to improve services.
7. Strategies to inform both medical professionals and the public about home health services available to them.

The questionnaire was designed with close cooperation from the Home Health staff.
(See Appendix A for questionnaire.)

Differences in referral frequency and sources of referrals meant that the questionnaire would have to be kept largely open, i.e., respondents' answers would be written verbatim, instead of using all closed response categories (like #3,5,8) where individual replies and comments are often lost. (Note: open response categories work only if one or two professional interviewers conduct the survey in the same way, asking the same questions in a duplicate manner. This survey was conducted by the Health Department's two person research staff.)

Results

The results are presented to you in three parts, from respondents who refer (I) frequently (n=7), (II) seldom (n=5), and (III) never refer (n=4).^{*} (Note: when we asked respondents in Category III if they had ever referred a patient to Home Health care, three of the four said they had!)

1. First, do you feel there is a need for the H.D.'s HH Agency?

| | I | II | III | Total |
|-------|---|----|-----|-------|
| Yes | 6 | 5 | 3 | 14 |
| No | - | - | - | 0 |
| DK/NR | - | - | 1 | 1 |

^{*}Please note: Categories may not add up because of double interviewing, respondent error or other interviewing adjustments.

1. Is there also a need for increased or expanded services?

| | <i>I</i> | <i>II</i> | <i>III</i> | Total |
|-------|----------|-----------|------------|-------|
| Yes | 4 | - | 3 | 7 |
| No | 2 | 4 | - | 6 |
| DK/NR | - | 1 | 1 | 2 |

Respondent Comments: A significant number of respondents who felt there was a need for increased or expanded services also said that there was a need for more frequent visits. Some respondents felt that more frequent visits could be used to check in with patients to see if they are taking their medication, eating well, and to provide some reassurance to home-bound patients. One doctor was not sure what home health covers and one felt that the Missoula Health Department's Agency duplicated available home health services offered by the Rehabilitation Center's Agency. One respondent wanted more Hospice-type care.

2. What factors do you use when deciding whether or not to refer your patients to HH care? (Note: Responses are grouped into most frequently-mentioned only.)

| <i>I</i> | <i>II</i> | <i>III</i> |
|--|---|--|
| <p>Nursing needs (esp. if not sure patient can take care of self, but need some help or need checking on.)</p> <p>If patient lives alone do they have help? Are they capable of taking care of self?</p> | <p>Type nursing care needed.</p> <p>Available support system.</p> <p>Can patient come to physician office easily?</p> <p>Does patient live alone?</p> | <p>NO CONSISTENT RESPONSE Comments not correlated</p> <p>Function of Home Health is to check on patients.</p> <p>Carrying out doctor orders.</p> <p>If patient requires evaluation in/of home.</p> <p>If patient requires home health care.</p> <p>If Home Health nurse can provide needed care.</p> |

2a. Have you ever referred a patient to HH?

Note: This question was asked to confirm that Category *III* respondents had indeed not referred. Three of the four said that they had, indeed, referred a patient to Home Health care. The one physician who had not said that he used the Rehabilitation Center because it was easy to initiate services and he could set up services before the patient left the hospital. Results are reported in Category *III* for all four doctors.

3. From your viewpoint, what is the first and second most important service offered by HH?

| | I | | | II | | | III | | | Total |
|--|----|----|---------------|----|----|----------------|-----|----|-----------------|-------|
| | #1 | #2 | Total Group I | #1 | #2 | Total Group II | #1 | #2 | Total Group III | |
| a. help the patient's family provide care. | 1 | 1 | 2 | 0 | 2 | 2 | 1 | 1 | 2 | 6 |
| b. provide less costly care. | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 3 |
| c. act as alternative to nursing home. | 1 | 2 | 3 | 1 | 1 | 2 | 2 | 0 | 2 | 7 |
| d. teach patient/caretaker about health needs. | 0 | 0 | 0 | 1 | 2 | 3 | 1 | 0 | 1 | 4 |
| e. shorten hospital stay. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| f. insure continuity of care. | 2 | 3 | 5 | 1 | 1 | 2 | 0 | 2 | 2 | 9 |
| g. provide care more appropriate to patient's needs. | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 1 | 4 |

(Note: In case of a tie where the respondent would not choose one answer, both responses are shown.)

Analysis: Teaching the patient/caretaker about health needs (d) is seen as the least important service to Group I, shortening hospital stay (e) was least important service to Group II, and providing less costly (b) and shortening hospital stay (e) were least important to Group III. Interestingly, for those who refer to Home Health care a great deal, continuity of care (f) ranked highest, but less so for Group II, who generally felt that teaching the patient/caretaker about health needs (d) was most important.

4. Do you refer patients to other agencies which provide services in the home, like Meals on Wheels, Homemaker Services, RSVP, etc?

| | I | II | III | Total |
|-----|---|----|-----|-------|
| Yes | 6 | 5 | 2 | 13 |
| No | - | - | 2 | 2 |

If yes, which services?

Group I - Generally refers to Meals on Wheels, and a variety of other services ("Homemakers," "Y Program," "Transportation Services," "Hospice," "anything available," and "social workers do that, or the Home Health nurses.")

Group II - was more likely to refer to Meals on Wheels, RSVP, although they also cited Homemakers Program, Homechores, and telephone reassurance.

Group III - is much less likely to refer to any service. The Rehabilitation Center and Hospice were both mentioned, but we found a clear sense that doctors in this group do not have sufficient information about any type of or in-home services to refer to them.

5. Which form of care do you consider the most useful to your patients referred to HH care?

| | I | II | III | Total |
|--|---|----|-----|-------|
| a. personal care (bathing, grooming, etc.) | 0 | 1 | 1 | 2 |
| b. health teaching for independent living | 3 | 2 | 2 | 7 |
| c. physical, speech or occupational therapy | 0 | 0 | 0 | 0 |
| d. skilled nursing care (dressing changes ...) | 1 | 4 | 1 | 6 |
| don't know/no response | 1 | 0 | 1 | 2 |

Analysis: Group I sees health teaching (b) as most useful and personal care (a) and physical, speech or occupational therapy (c) as least useful to their patients referred to home health care. Group II feels that skilled nursing care (d) is most useful, while Group III was more inclined to view health teaching (b) as most useful, but by a very small margin. Interestingly, general comments show that respondents would like to see home health provide more personal care, but that form of care (a) rated very low on this question. This anomaly could be attributed to the practical "what is" nature of question five and the more abstract "what would you like" nature of question one.

6. How about patients you've referred to HH: Have they discussed their HH care with you?

| | I | II | III | Total |
|-------------|---|----|-----|-------|
| Yes | 6 | 5 | 1 | 12 |
| No | 0 | 0 | 2 | 2 |
| No Response | 0 | 0 | 1 | 1 |

Respondent Comments: We asked whether patients were pleased or displeased with their care, and received the following comments, quoted verbatim: *A few patients seemed to be reliant on the home health nurses.*

Often the home health nurse is more helpful to the doctor than the patient.

Just wished patient could get care more often and longer.

Very pleased.

Pleased with care.

Respondents (discharge planners) felt that public health care should be free; patients felt in some cases that home health cost was a problem.

7. Have you ever had any problem communicating your orders for the patient to the HH Agency?

| | <i>I</i> | <i>II</i> | <i>III</i> | <i>Total</i> |
|-------------|----------|-----------|------------|--------------|
| Yes | 1 | 2 | 0 | 3 |
| No | 5 | 3 | 3 | 11 |
| No Response | 0 | 0 | 1 | 1 |

Respondent Comments: Group I who refers to home health most often also had relatively few problems. Interestingly, Group II reported the proportionately highest number of problems, which strongly indicates that intermittence in working with home health leads to misunderstandings. Several respondents mentioned problems of getting to talk to nurses, or problems unless they talked to a "nurse who is intelligent to take a message." One respondent who had a problem with the Home Health Agency said that a referral was not passed from secretary to nurse and in another case the nurse tried "only once" to call the doctor about a patient who needed home health care. Another respondent mentioned phone disconnections and resenting mailing in the pink sheets to the Department.

8. How would you rate the level of professional nursing care given by HH nurses?

| | <i>I</i> | <i>II</i> | <i>III</i> | <i>Total</i> |
|--------------|----------|-----------|------------|--------------|
| Excellent | 6 | 3 | 2 | 11 |
| Good | - | 2 | 1 | 3 |
| Fair | - | - | - | -- |
| Poor | - | - | - | -- |
| Unacceptable | - | - | - | -- |
| Don't Know | - | - | 1 | 1 |

Analysis: There is no doubt (or surprise) that those who use home health a great deal also have the most faith in the quality of professional nursing care. Groups II and III were more likely to see the quality of professional nursing care as slightly lower than perceived by Group I.

9. What suggestions do you have to improve HH services?

Group I Comments (verbatim): *Make me more aware of all available services for patients.*

Go into the home more often and stay longer.

I'd like an evaluation from the home health nurse of what's necessary for the patient and from a professional's point of view.

Need personal care services to enable patients to stay home.

More frequent visits, especially for health maintenance and for what could be seen as no social justification--like to insure that patients are eating properly and for reassurance. Also, there is a need for daily visits, or perhaps volunteers could fulfill that role of seeing a patient daily and just checking on them.

The billing system is hard for a patient to understand. It would improve services to provide care more than once per day. Need more home health staff.

Group II Comments (verbatim): *More personal health care from non-nurses. Architectural advice and help to facilitate movement, bathroom use, etc.*

Better communication between the doctor and home health nurse.

Some people are unaware Home Health exists.

Group III Comments (verbatim): *More staff.*

Avoid politics and concentrate on health care.

Lot of patients require more personal care-- bathing, transfers, etc. to maintain independent living.

10. How should HH inform both medical professionals and the public about HH services available to them?

Group I Comments (verbatim): *On a one-to-one basis with doctors, volunteer to do in-services to hospitals so hospital staffs can mention care to their patient. More PSA's. Brochure good.*

Personal care aides needed to help with things like getting breakfast and getting dressed. News media doing a good job. Yearly send a brochure or make a personal visit to doctors. They need to be reminded.

The average doctor turns to the hospital social worker, so maintain contact with them. Also visit appropriate doctors. Probably won't get new patients from media spots to general public. Don't advertise unless you can get it for free.

Brochure is good, but must keep handing them out. Have done a good job this past year (with PSA's), now you must keep it up. Reach new doctors.

Make all doctors aware of home health by going to medical society or hospital meetings. Be sure staffs of rest homes, Eagles Manor, etc. are aware of services.

Should be a speaker from the Health Department at hospital conferences. Patients ask me about home health; make them (pts) more aware of the services. Make hospital nurses more aware because they often make suggestions to doctors, but be careful you don't ignore the doctors in the information process.

Group II Comments (verbatim): *Article in newspaper about Home Health Agency.*

*Presentation to physicians at medical meetings (i.e., Western Montana Medical Society).
Communication with hospitalized patients.*

Concentrate on hospital social services and direct public education programs. Use the media. Make reports to medical staffs or doctor's groups, Meals on Wheels clients, homemakers, hospital nursing staffs and rehabilitation personnel.

A list every four to six months of available services; notices and ads in the papers.

Group III Comments (verbatim): *Send out flyers on a quarterly basis to doctors and hospitals. Use ads on radio and TV so patients can ask their doctors about Home Health. Update home health information. What I don't know about, I don't use.*

Send a monthly resume of how the patient is doing to their doctor. For the public, use radio and newspaper. Other agencies and organizations will be more helpful than doctors to spread the word.

Bulletin to explain what is available and how to get in touch with the Home Health Agency. Newspaper articles.

TV spots to the public. Use the Friday morning medical meetings at Saint Patrick Hospital. Presentations to Senior Citizens Center.

Conclusions and Recommendations

First, this survey was an informal effort and, as such, does not closely follow established research design. The information we gathered is presented to you in summary form and the translation from quick interview notes to more complete and

intelligible phrases is subjective.

Second, the strongest recommendation I have to make on the basis of these results is that a strong public relations and marketing campaign be instituted to close the wide gap between available home health services and services used by medical professionals. The consensus among respondents was that a strong professional presentation to medical and nursing groups would be most effective. (Perhaps a complete panel with representatives from each of in-home care agencies to give medical and social work professionals a thorough, over-all view of available services?) The home health brochure, public service announcements and newspaper and other media spots are important, but must be "maintained," i.e., continued regularly, updated and kept current and in front of the public.

Third, in general, the survey shows a very strong regard for the level of professional nursing care, and relatively few communication problems between the agency and medical professionals. Somewhat surprising, however, are the differences of perception of the role of home health care (question three) and the most useful home health service. This result may not be so surprising, after all, when looking at the general misunderstanding of what home health is, how it operates and what population it is designed to serve (especially when respondents call for more personal care--"getting dressed and getting breakfast," "checking on patients' diets and insuring patients make their appointments.").

It was our pleasure to conduct this survey for you. Be sure to contact me to answer any questions that you have, or to explain more fully any respondent comments. (Some, I'll warn you, aren't meant to be clear; they're meant to show that respondents do not know what home health services means!)

JSH/j
qstr. attached

A - refers consistently
B - refers, but seldom
C - do not refer

CODE
1 - physician
2 - discharge planner

Interviewer _____

Code _____

HOME HEALTH REFERRAL SURVEY

The purpose of this survey is to find out which HH services most benefit you, and also to be better advised about what you, professionally, like and don't like about HH care.

1. First, do you feel there is a need for the H.D.'s HH Agency?

☐ yes-----> Is there also a need for increased or expanded services? ☐ yes
☐ no

☐ no-----> Why do you say that? _____

- A/B 2. What factors do you use when deciding whether or not to refer your patients to HH care?

2. Have you ever referred a patient to HH?

☐ yes-----> (go to #2, A/B)

☐ no-----> Why is that? _____

3. From your viewpoint, what is the first and second most important service offered by HH? *(respondent card)*

- help the patient's family provide care
- provide less costly care
- act as alternative to nursing home
- teach patient/caretaker about health needs
- shorten hospital stay
- insure continuity of care
- provide care more appropriate to patient's needs

4. Do you refer patients to other agencies which provide services in the home, like Meals on Wheels, Homemaker Services, RSVP, etc?

☐ yes-----> Which services? _____

☐ no-----> Why is that? _____

- A/B 5. Which form of care do you consider the most useful to your patients referred to HH care? *(respondent card)*
- a. personal care (bathing, grooming, etc.)
 - b. health teaching for independent living (teaching diabetics to give their own insulin injections)
 - c. physical, speech or occupational therapy
 - d. skilled nursing care (dressing changes, catheter care)
- A/B 6. How about patients you've referred to HH: Have they discussed their HH care with you?
- __ yes-----> Were they pleased or displeased with their care? _____
- __ no
- A/B 7. Have you ever had any problem communicating your orders for the patient to the HH agency?
- __ yes-----> Type of problems? _____
- a _____
- _____
- __ no a _____
- _____
- A/B 8. How would you rate the level of professional nursing care given by HH nurses?
- __excellent __good __fair __poor __unacceptable
- A/B 9. What suggestions do you have to improve HH services? _____
- _____
- _____
10. How should HH inform both medical professionals and the public about HH services available to them?
- _____
- _____
- _____

THANK YOU!





SECTION 4

REFERRALS FOR SERVICE - PROTOCOL AND REFERRAL RECORD

Results - A. Protocol: The Missoula Health Department did not have a written guide describing acceptable and non-acceptable referrals until the Referral Protocol (page 4.2) was developed. The protocol, intended to quantify what types of patients and under what conditions referrals for service are to be accepted, helps insure agency consistency. The Department was also concerned with a low acceptance to referral ratio. The protocol is currently being tested in Missoula until approximately October, 1981 to determine if it is accurate, workable, and complete. Analyzing referral forms will show whether or not the protocol is being used effectively.

B. Referral Record: The Record (page 4.5) also insures consistency and accuracy in telephone referrals from both health professionals and the public. A referral log (cited in the original evaluation plan, Section 6) would also be effective, but the advantage of a two-part Referral Record is that one copy can be kept for a referral file and one copy can be routed to the nurse who is assigned to handle the case. The Record has been proven to be very effective when it is filled out completely.

Discussion - The purpose of both the Protocol and Referral Record is to insure program consistency. Home Health administrators felt that there was too much time wasted with inappropriate referrals (45% of referrals were inappropriate and those patients were not added to the caseload), so both the Protocol and Referral Record are seen as a way to correct this problem.

Methodology - A. Protocol: The Protocol should be reviewed by nursing staff and clerical personnel in a training session or staff meeting. After it has been used for six months (or quarterly), it should be evaluated for effectiveness. One way to evaluate the Protocol is to see if the percentage of cases accepted to total referrals has improved.

B. Referral Record: To be serviceable, a record must be completely filled out for each referral. It can be designed so that a home health nurse or supervisor receives one copy, while the other copy is filed for a permanent record. Referral Records would be reviewed at set time periods to insure they are being filled out completely and to gather home health statistics.

Referral Record

Referrals Made by Physician or Office Nurse: If specific orders or medications are included, the referral must be completed by a registered home health nurse. If an RN is not available, take the general information (name of patient, doctor, telephone number) and tell the person making the referral that a home health nurse will return the call as soon as possible for further information. Refer to daily sign-out sheet to locate an RN if situation needs immediate attention.

Referrals Made by other Source: If referral is made by a registered nurse, hospital discharge planner, social worker, family member, social service agency, or other person, and the referral does not include doctor's orders or medication, refer to the following protocol.

Date / /

Pt. Name _____ Spouse _____
Address _____
Phone _____ Age _____ D.O.B. _____

Referred by _____ Phone _____
Pt's Doctor _____
Diagnosis _____
Hospital _____ from _____ to _____

ORDERS/NEEDS _____

"HOW DID YOU FIRST LEARN ABOUT HOME HEALTH CARE?"

Health Ins. Claim #

Date Case Started

Pt. Status new admission
 readmit same dx
 readmit different dx

rec'd by

REFERRAL PROTOCOL

ACCEPTED REFERRALS:

- I. Colostomy-Ileostomy
 - A. Ostomy dressing changes
 - B. Instruction to client and/or family
- II. Cancer Care
 - A. Post-surgical skilled nursing
 - B. Terminal care
 - C. Dressing changes
 - D. Health teaching
- III. Catheter care--Irrigations
 - A. Indwelling foley
 - B. Catheterization for culture
 - C. Irrigations
 - D. Instructions for cath care - irrigations to client and/or family
 - E. Teaching self catheterization
- IV. Dressing Changes and Wound Care
 - A. Decubiti, ulcers, incisional wounds
 - B. Teaching client or family wound care
 - C. Wound irrigations - application of medications
 - D. Suture removal
- V. Exercises
 - A. Passive ROM
 - B. Teaching body mechanics for transfer of client
- VI. Medications - Injections
 - A. Review meds with client or family and assist in setting up daily regime
 - B. Instructions to give insulin injections or teach family members
 - C. Weekly filling of insulin syringes
 - D. Short term daily insulin injections
 - E. B12 injections
 - F. Other parenteral meds per doctors order
- VII. Teaching
 - A. Diabetic care
 - B. Special diets
 - C. Ostomy care
 - D. Nasogastric home care
 - E. Trach care
 - F. COPD self care
 - G. Self administered injection
 - H. Care of terminally ill or bedridden teaching to promote optimum comfort

VIII. Venipuncture

- A. Blood drawing for lab analysis

IX. Vital Signs

- A. Orthostatic hypotension
B. Hypertension
C. C.V.A.
D. C.H.F.
E. Medication regulation
F. Renal impairment

X. Personal care

- A. Most generally accepted

NOT ACCEPTED

- more than one visit daily
- 24-hour care
- loan of equipment to client not on caseload or to furnish supplies only
- daily assistance for personal care
- daily visits to insure client takes meds as ordered
- allergy desensitization
- home chores
- no transportation available
- emergency services of patients not on caseload.

SUPPORT AGENCIES

1. Home Attendants: call discharge planners - Peg Kurtz/Maureen O'Malley
St. Patrick Hospital 543-7271
- Della Swartz/Gloria Horesji
Community Hospital 728-4100
- Diane Peterson
Missoula General Hospital 542-2191
2. Home Assist Program, YWCA - 543-6691
3. Home Chores and Mini Bus, Senior Citizen Center - 549-8970
4. Meals, Missoula County Nutrition Project, Nancy Adams 549-6621
5. Hospice - 549-7757
6. Missoula Cancer Society and American Cancer Society, Betty Heimberger 549-8804
7. Homemaker, Dept. of Public Welfare 721-5700, ex. 421.

Missoula City-County Health Department
Nursing Division
HOME HEALTH REFERRAL RECORD

Date ____ / ____ / ____

| | |
|----------------|------------------------|
| Pt. Name _____ | Spouse _____ |
| Address _____ | |
| Phone _____ | Age _____ D.O.B. _____ |

| | |
|-------------------|---------------------|
| Referred by _____ | Phone _____ |
| Pt's Doctor _____ | |
| Diagnosis _____ | |
| Hospital _____ | from _____ to _____ |

ORDERS/NEEDS _____

"HOW DID YOU FIRST LEARN ABOUT HOME HEALTH CARE?" _____

Health Ins. Claim # _____
Date Care Started _____
Pt. Status _____ *new admission*
_____ *readmit same dx*
_____ *readmit different dx*

rec'd by _____

cd/6/81/r--j-n

Missoula City-County Health Department
Nursing Division
HOME HEALTH REFERRAL RECORD

Date ____ / ____ / ____

| | |
|--------------------|------------------------|
| Patient Name _____ | Spouse _____ |
| Address _____ | |
| Phone _____ | Age _____ D.O.B. _____ |

| | |
|-------------------|---------------------|
| Referred by _____ | Phone _____ |
| Pt's Doctor _____ | |
| Diagnosis _____ | |
| Hospital _____ | from _____ to _____ |

ORDERS/NEEDS _____

"HOW DID YOU FIRST LEARN ABOUT HOME HEALTH CARE?" _____

Health Ins. Claim # _____
Date Care Started _____
Pt. Status _____ *new admission*
_____ *readmit same dx*
_____ *readmit different dx*

rec'd by _____

cd/6/81/r--jsh



MISSOULA CITY-COUNTY HEALTH DEPARTMENT



301 West Alder • Missoula, Montana 59801 • Ph. (406) 721-5700

TO: Jean Pinsoneault, Home Health Supervisor
FROM: Susan Plath, Research *Sputh*
DATE: November 30, 1981
RE: Review of Home Health Referral Protocol

Summary

The Referral Protocol was developed to help reduce the number of referrals that were not admitted to the Home Health caseload. A record audit conducted from May-October, 1981, revealed that the percentage of cases accepted to total referrals had increased slightly from last year (49% accepted in 1980, 51% accepted in 1981).

Background and Methodology

The purpose of the Home Health Referral Protocol (protocol) is to insure program consistency. Home Health administrators felt there was too much time wasted with referrals that were not admitted to the caseload. Last year (January - December 1980), 45% of the referrals were on patients who were not added to the caseload, so the Protocol was seen as a way to correct this problem.

The Protocol was evaluated after six months for its effectiveness. One way to evaluate the Protocol is to see if the percentage of cases accepted to total referrals has improved. This was done by counting the number of referred cases, the number of those cases accepted and the number rejected and then comparing those results with the same six-month period from last year.

Results

A total of 111 referrals were made to the Home Health Unit between May and October, 1981. Of those 111 referrals, 57 cases (51%) were accepted and 54 (49%) were not accepted to the caseload. Ninety-two (92) total referrals were made from May - October, 1980. Of those 92 referrals, 44 or 48% were accepted and 48 or 52% were unaccepted.

An analysis of referrals that were not accepted to the caseload revealed four distinct categories:

- A - Referral for services Home Health does not provide (i.e. 24-hour care, home-maker services, daily care, medication compliance).
- B - Referral, under normal circumstances, would be accepted to the caseload (i.e. patient re-admitted to hospital/nursing home/etc., one-time visit, instructing family member on patient care, patient expired).
- C - Records are unclear as to action taken.
- D - Patient or family member canceled home health services, although the services may be covered under home health.

The results from the May-October periods are listed below:

| Category | 1980 | 1981 |
|--|--------|--------|
| A. Referral for service home health does not provide. | 21.0% | 18.5% |
| B. Referral, under normal circumstances, would be accepted to home health case-load. | 35.5% | 30.0% |
| C. Records unclear as to action taken. | 8.0% | 14.5% |
| D. Patient or family member canceled home health services. | 35.5% | 37.0% |
| TOTAL | 100.0% | 100.0% |

| Type of Visit Made | 1980 | 1981 |
|----------------------------------|------|------|
| Home Visit | 35% | 46% |
| Telephone Call | 35% | 24% |
| No indication on referral record | 29% | 26% |
| Other | -- | 4% |
| TOTAL | 100% | 100% |

These statistics indicate:

1. There are a large number of referrals taken for services Home Health does not provide. Is the Protocol followed? Are enough questions asked so we know exactly what services are needed?

If requests are made for services Home Health does not provide, immediate public education will help that person better understand the Home Health Program and its services.
2. Referral records, unclear in the action taken on a case, have increased from 8% in 1980 (May-October) to 14½% in 1981 (May-October). This 6½% increase is significant and worth close review. Does the Referral Record provide enough space for the Home Health Unit to make comments? Why has the number of unclear records increased?

3. There are a large number of canceled referrals, although the service may be covered under home health. A closer analysis of who is making referrals may help explain why so many patients or family members cancel home health services.

If the referral source is predominantly medical professionals, it may indicate a communication breakdown between professional and patient or family members. Are professionals making referrals without discussing it with the involved parties? Do the parties fully understand the referral and what home health will provide? Increased education may help solve this problem.

If the referral source is a concerned friend or neighbor, the likelihood that this person has talked to the involved person is small. Although there is not much we can do about improving this, we could use this as an opportunity to educate the friend or neighbor on home health services.

4. A lot of time is spent on home visits to patients that are never added to the caseload. Possibly obtaining more information over the phone would decrease the time and money spent on these referrals.

Conclusion and Recommendations

The number of home visits made on referrals that are not added to the caseload is costing the Home Health Unit time and money - time and money that could be used for those needing home health services. Decreasing the number of referrals that (1) are made for services home health does not provide and (2) are canceled by patient or family members, would help streamline activities.

I recommend:

1. The Home Health Unit review the Referral Protocol and talk about "gray" areas so all involved personnel handle referrals similarly, thus providing consistency.
2. A record audit to find the referral sources for those patients or family members who do not accept home health services, even though they may qualify. Once the sources are known, target education efforts toward that group or groups.
3. Discussing how to decrease the number of records that are unclear concerning the action taken on a case.
4. Continuing to educate the public, over the phone if necessary, and professionals on home health services.

The 2% increase in referrals added to the caseload from 1980 to 1981 is not a significant percentage to draw conclusions concerning the Referral Protocol. I recommend another Protocol review in six months. I will conduct this review in May, unless I hear otherwise from you.

It was a pleasure working on this report for you. If you have any questions and/or would like to meet to discuss these results, please let me know.



MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 West Alder • Missoula, Montana 59802 • Ph. (406) 721-5700



TO: Jean Pinsoneault, Home Health Supervisor
FROM: Susan Plath, Research and Evaluation
DATE: June 16, 1982
RE: Review of Home Health Referral Protocol, Final Report

SUMMARY

The Home Health Referral Protocol was developed to help increase the number of accepted referrals to the home health caseload through consistency from referral to referral. A record review from May 1980 - April 1981 and May 1981 - April 1982, should have revealed the effectiveness of the Protocol. This did not occur because of a staff turnover in the middle of the second year. The new staff person was not trained on the Protocol. This person is now aware of the Protocol and understands its use. A six-month record study (June - December) of the Protocol would indicate its usefulness.

BACKGROUND AND METHODOLOGY

The purpose of the Home Health Referral Protocol (Protocol) is to insure program consistency. Home Health Administrators felt too much time was spent on cases that did not meet home health service guidelines.

The Home Health division began using the Protocol in May 1981. To evaluate the effectiveness of the Protocol, comparisons of the percentage of cases accepted to total referrals was calculated. This was done by counting the total number of referred cases for a specific time period and the total number of those cases accepted to the caseload. The results were then compared to the previous year's results, for the same time period. If the percentage improved, the Protocol could be responsible for the increased efficiency; if the percentage decreased, the Protocol may need clarification.

RESULTS

A six-month record review from May-October 1980 and 1981, revealed a slight increase in 1981 in the number of accepted referrals to caseload. The six months in 1980 indicated 49% of the total referrals were added to the caseload compared to 51% of the 1981 referrals. This increase was too small to make any statement regarding Referral Protocol effectiveness. It was recommended that another record review take place for the six months, November through April, 1980-81 and 1981-82.

This report presents the statistics in aggregate (May-April, 1980-81; 1981-82) and segregate (May-October, November-April 1980-81; 1981-82) form. The results can vary depending on the method used.

A total of 206 records were reviewed during the 1981-82 evaluation. Of those 206 referrals, 112 cases (54%) were accepted to the caseload. The 12-month period in 1980-81, revealed a total of 193 cases. Of those, 107 or 55% were accepted to the caseload. When looking at the six-month studies, the following results show an interesting trade off.

J. Pinsonneault
H H Referral Protocol Review
Final Report
June 16, 1982

| Time Period | SEGREGATE DATA | | | | AGGREGATE DATA | |
|-----------------------|-----------------|-----------------|--------------------|--------------------|-----------------|-----------------|
| | May-Oct 1980 | May-Oct 1981 | Nov-Apr 1980/81 | Nov-Apr 1980/81 | Annual 80/81 | Annual 81/82 |
| Accepted Referrals | 49% | 51% | 61% | 58% | 55% | 54% |

One major factor influencing these results involves personnel turnover. In September, a new secretary began working for the Home Health division. She did not know about the Referral Protocol until the study was finished. This makes it impossible to evaluate the Protocol effectiveness. Although the results will not signify effectiveness, they are presented for your information.

Closer analysis of those cases that were not accepted to the caseload, revealed four distinct categories:

- A - Referral is for services Home Health does not provide (i.e. 24-hour care, home-maker services, daily care, medication compliance).
- B - Referral, under normal circumstances would be accepted to caseload (i.e. patient re-admitted to hospital/nursing home, one-time visit - education/instructing family member on patient care, patient expired).
- C - Records are unclear as to action taken, although an ID card was completed and contains the necessary information.
- D - Patient or family member canceled home health services, although service may be covered under home health.

| Category | SEGREGATE DATA | | | |
|---|-----------------|-----------------|--------------------|--------------------|
| | May-Oct 1980 | May-Oct 1981 | Nov-Apr 1980-81 | Nov-Apr 1981-82 |
| A. Referral for service home health does not provide | 21% | 19% | 41% | 29% |
| B. Referral, under normal circumstances would be accepted to caseload | 36% | 30% | 31% | 47% |
| C. Records unclear as to action taken, although ID card completed. | 8% | 15% | 4% | 4% |
| D. Patient or family member canceled home health service. | 36% | 37% | 24% | 20% |

Percentages may not add to 100% due to rounding.

AGGREGATE DATA

| Category | Annual 1980-81 | Annual 1981-82 |
|--|-------------------|-------------------|
| A. Referral for service home health does not provide | 31% | 23% |
| B. Referral, under normal circumstances would be accepted to caseload | 34% | 38% |
| C. Records unclear as to action taken, although ID card completed. | 6% | 10% |
| D. Patient or family member canceled home health service. | 29% | 29% |
| Percentages may not add to 100% due to rounding. | | |

As you can see, looking at the information on a segregate basis reveals results one way, the aggregate quite another. The aggregate data provides a picture of what is happening throughout the year and stabilizes fluctuations in segregate data (example: C, above, Segregate data for May-Oct 1981=15%; Nov-Apr 1981/82=4%; Aggregate data stabilizes this at 10% for the year).

The segregate data is helpful, if collected on a six-month basis. It can help standardize procedures and policy implementation, pinpoint problem areas, and provide valuable management data.

These statistics indicate a significant number of referrals on patients who canceled the service. Many of these patients received a telephone call or home visit. Learning who is referring these patients may prove beneficial.

If the referral source is predominantly medical professionals, it may indicate a communication breakdown between professional and patient or family members. Are professionals making referrals without discussing it with the involved parties? Do the parties fully understand the referral and what home health will provide? Increased education may help alleviate this problem.

If the referral source is a concerned friend or neighbor, the likelihood that this person has talked to the involved person is slim. Although there is not much we can do about improving this, we could use this as an opportunity to educate the caller on home health services.

The percentage of "A" category referrals has decreased from 1980 to 1982 figures (1980-81=31%; 1981-82=23%). Possibly, the education efforts could explain this decrease. Continued education efforts should continue to decrease the "A" category referrals.

The type of visit made on cases that were not accepted to caseload helps administrators learn of time and cost expenditures. If all home health staff time is spent conducting home visits, then clarification of the Referral Protocol may help by screening those cases the Home Health Agency can not accept. The following Table indicates the type of contact made with potential clients.

| Type of Visit Made | SEGREGATE DATA | | | | AGGREGATE DATA | |
|--------------------------------------|-----------------|-----------------|--------------------|--------------------|-------------------|-------------------|
| | May-Oct 1980 | May-Oct 1981 | Nov-Apr 1980/81 | Nov-Apr 1981/82 | Annual 1980/81 | Annual 1981/82 |
| Home Visit | 35% | 46% | 40% | 35% | 37% | 41% |
| Telephone Call | 35% | 24% | 44% | 38% | 39% | 32% |
| No indication on referral record* | 29% | 26% | 7% | 15% | 19% | 21% |
| Other** | 0% | 4% | 9% | 12% | 4% | 5% |

*Indication of type of visit on ID card.

**Examples: readmit to hospital before visit made; expired before visit, etc.
Percentages may not add to 100% due to rounding.

Home visits were made to the "B" category patients in the majority of cases. The one exception was for the May-October 1981 time period, where the majority of visits were made to clients who requested services the Agency did not cover.

CONCLUSIONS AND RECOMMENDATIONS

Training new staff in all areas of Home Health, including protocols, is critical to an efficient office. A staff turnover occurred during this study. The new person did not use the Referral Protocol in streamlining cases. A record review in six months will provide accurate data on the Protocol's effectiveness.

Recommendations include:

1. A record review in six months to evaluate the Protocol effectiveness.
2. The Home Health Unit (including secretarial staff) review the Referral Protocol at least once a year. It is necessary that staff interpret the Protocol in a similar manner. This will standardize the Unit.
3. Provide orientation sessions for staff, which includes reading and discussing the Home Health Evaluation Model and those instruments utilized.
4. A record review to find the referral sources on patients who cancel home health services. This could be done at the same time as the six-month Protocol review.
5. Continue education efforts with the health care community.
6. Continue collecting data on a regular basis. Areas of service do change and it is necessary to update all protocols and instruments, as necessary. Collecting data helps point out problem areas that are otherwise unnoticed. For example, several suggestions were offered for improving the Referral Record to meet changing needs in the Unit. The revised copy is attached.

It was a pleasure working on this report for you. If you have any questions, please do not hesitate to let me know.

HOME HEALTH REFERRAL RECORD

Date / /

| | |
|----------|-------|
| Pt. Name | _____ |
| Address | _____ |
| Phone | _____ |
| Age | _____ |
| D.O.B. | _____ |

| | | | |
|-------------|-------|-------|-------|
| Referred by | _____ | Phone | _____ |
| Pt's Doctor | _____ | | |
| Diagnosis | _____ | | |
| Hospital | _____ | from | _____ |
| | | to | _____ |

ORDERS/NEEDS

| | |
|---------------------|----------------------|
| Health Ins. Claim # | _____ |
| Medicaid Claim # | _____ |
| Medicare Claim # | _____ |
| Date Care Started | _____ |
| Pt. Status | new admission |
| | headmit same dx |
| | headmit different dx |
| | assessment |
| | admit/discharge |

revised 6/82

slip
Rec'd by _____

HOME HEALTH REFERRAL RECORD

Date / /

| | |
|----------|-------|
| Pt. Name | _____ |
| Address | _____ |
| Phone | _____ |
| Age | _____ |
| D.O.B. | _____ |

| | | | |
|-------------|-------|-------|-------|
| Referred by | _____ | Phone | _____ |
| Pt's Doctor | _____ | | |
| Diagnosis | _____ | | |
| Hospital | _____ | from | _____ |
| | | to | _____ |

ORDERS/NEEDS

| | |
|---------------------|----------------------|
| Health Ins. Claim # | _____ |
| Medicaid Claim # | _____ |
| Medicare Claim # | _____ |
| Date Care Started | _____ |
| Pt. Status | new admission |
| | headmit same dx |
| | headmit different dx |
| | assessment |
| | admit/discharge |

revised 6/82

slip
Rec'd by _____

SECTION 5

HOME HEALTH COST-EFFECTIVENESS SUMMARY

Results - The Home Health Cost-Effectiveness Summary concisely lists 34 studies of home care's cost savings as home health care is compared with other forms of intermediate and long-term care. The studies cited are from a study of current literature in the field in 1980.

Discussion - The Summary is included in the Users' Guide as a way of showing the various methodologies and results of cost studies conducted on home health services. It is important to note that there is wide variation in cost-savings figures, reflecting the many differing methods and opinions of experts as they try to compare the costs of home care with costs of hospital and nursing home care. Part of the problem comes from the difficulty of quantifying the psychological benefits claimed by home care proponents and of finding a way to evenly apply costs when patients show wide variation in care required and diagnoses.

Methodology - None. Data presented is for reference only.

HOME HEALTH COST-EFFECTIVENESS SUMMARY

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|---|--|--|
| 1. Kaiser Foundation Health Plan, Portland, OR 1968 | About 900 | over age 65 and under age 65 - two groups | hospital-based group plan, in conjunction with ECF | Estimated savings reported to be \$635,062 or 8745 days of in-hospital care from home care visits, at an average cost of \$20.77 per visit. |
| 2. Blue Cross of Greater Philadelphia, 1961-70, Home Care Department | 3,940 | Mixed age group, both Blue Cross and Medicare | hospital-based home care | Net cost savings were \$1,298,381, or \$330 per case. An average of 12.9 in-patient days were saved on each patient, adding up to a total in-hospital savings of 50,800 days. Average home care length of stay was 38 days, provided at an average cost of \$7.95 per day. |
| 3. Associated Hospital Service of New York, Report to U.S. Senate Committee On Aging, 1972. | 5,000 | For all ages, and broken down by age group. | hospital-based home care | Total cost savings were \$2,139,500, or \$730 per case. Patients utilized 335,573 home care days (an average stay of 61 days) costing \$1,963,500. As a result, 113,000 days of acute hospital care were averted by substituting home care. |

SUMMARY OF COST-EFFECTIVENESS
CONT.

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|--|------------------------------------|------------------|---|---|
| 4. Home Care Assoc., Rochester, NY, 1961. | 1 | 64 years of age | home care association | Cost savings equaled \$5400. Home care expenses added up to \$1350, while equivalent in-hospital services were \$6800. (Acute Stroke) |
| 5. Home Care Assoc., Rochester, NY, 1972. | 458 | mixed age group | hospital-based comprehensive services | Net savings of \$681,275 or \$446 per case, were reported. Equivalent in-hospital care was \$108 per day compared to \$15.61 for home care. |
| 6. Mount Sinai Hospital, Milwaukee, Wisc., 1968 | 175 home care and 85 hospital care | mixed age group | hospital-based home care | Cost of home care was one-half of institutional expenses incurred. |
| 7. Home Care Assoc., Rochester, NY, 1974 | 1 | -- | home care association | Savings as a result of home care totaled \$500. (Acute - broken legs.) |
| 8. St. Lukes Hospital Medical Center, NY, NY, 1974, (STROKE, Vol. 5, January) | 2 groups of 25 patients | most over age 65 | in-hospital and nursing home comparison | Home care cost savings were \$25 and \$ compared to nursing home and in-hospital accommodations respectively. |
| 9. Blue Cross-Blue Shield of Greater Philadelphia (Report to U.S. Senate Committee on Aging, 1972) | 3,940 | over age 65 | hospital-based home care | Average of 12.9 inpatient hospital days were saved, adding up to an overall cost savings of \$330 per case. |

SUMMARY OF COST-EFFECTIVENESS
CONT.

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|-----------------|--|---|
| 10. Associated Hospital Services, NY, NY. (Report to Special U.S. Senate Committee on Aging, 1972) | 5,000 | mixed age group | hospital-based home care | Home care to patients receiving Blue Cross benefits resulted in a cost savings of \$1.5 million to Blue Cross and \$2.1 million to patients. |
| 11. Health Services Administration, NY NY, "Home Care: An Agenda for Action," 1974 | 1,000 | over age 65 | home care unit of city health department | Costs for 100 patients in a nursing home are \$13 million per year, compared to \$9.84 million for home care (including rent and income maintenance). Resultant cost savings is \$3.16 million per year. |
| 12. Berger, E: "Study and Analysis of Utilization and Cost Data Concerning the Provision of Home Health Service and Extended Care Service." HOME HEALTH AGENCY CONCERNS, National League for Nursing, New York, 1971. | 31,700 | under age 75 | -- | Attending physicians asked to estimate number of hospital days saved upon discharge to home care. Home care prevented institutionalization of 27 ^{1/2} a savings to the provider of \$90 per patient. 117 enrollees were discharged from the hospital an average of 7.1 days early; the savings to the provider was \$187 per patient. |

SUMMARY OF COST-EFFECTIVENESS
CONT.

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|--|---------------|----------------------------|----------------------------|--|
| 13. Scutchfield, F. D., Freeborn, D. K. "Estimation of Need, Utilization, and Costs of Personal Care Homes and Home Care Services." HSMHA HEALTH REPORTS, 86: 372-376, April 1971. | 318 | from 40-bed rural hospital | --- | Physicians estimated that if home care and personal care home services had been available, 22 of 318 patients would have been discharged an ave. of 4 days earlier than their hospital stays; 9 patients could have avoided hospitalization. Potential annual savings from early hospital discharge would offset \$14,616 of the \$46,800 annual cost of home care. |
| 14. Home Care Association of Rochester: "A Critical Review of Four Home Care Cost-Benefit Analyses." Tenth annual report, May 1971, and twelfth annual report, May 1973. Case Western Reserve University, Cleveland, 1976. | 300 | --- | home care association | Physicians were asked whether further hospitalization would have been required if home health care had not been available. In 1970, physicians reported home care resulted in the early discharge of 83% of cases; in 1972, the percentage was 30. In both years, the average was 21 days of estimated reduction in hospitalization. Overall, a savings of at least \$56 was achieved per home care patient. |
| 15. Denver Visiting Nurse Assoc.: Cited by E. Lindsey in: "New Perspectives in Health Care for Older Americans." Committee on Aging, Jan. 1976. | 1,388 | --- | visiting nurse association | Attending physicians reported that 620 of VNA cases represented early hospital discharges. Cost savings averaged 15.6 days of hospital care, or \$1,172. Estimates average cost savings of \$356 per hospital discharge to home care. |

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|------------------------|------------------------|--|
| 16. Merlin, D: "Home Care Project for Indigent Allows Dignified Care, Cuts Costs." HOSPITALS, 49: 77-78, Oct 16, 1975 | 14 | --- | home care | 14 patients in permanent need of oxygen were successfully transferred from hospital to home care between 1972 and 1974 at a savings of \$30,000 per year per patient. |
| 17. Strawcyski, H. (McGill University and Children's Hospital, Montreal, Canada.): Cited by E. Lindsay in: Reported Savings in Hospital Care Through Home Care. State Communities Aid Assoc. NY 1975. | 40 | --- | home and hospital care | For 2 years (1970-72), hemophiliac children were randomly assigned to 2 groups of equal size. Patients in the home care group averaged 45 fewer days in the hospital than patients treated only at the hospital. Charges for the care of patients in the control groups averaged \$2,238 more. |
| 18. Stone, J., et al: "The Effectiveness of Home Care for General Hospital Patients." JAMA, 205: 95-98, July 15, 1968. | 260 | --- | home and hospital care | On the average, patients who were not eligible for home care spent 15.9 days in the hospital after their physicians stated they were ready for discharge to home care. Charges for those on home care averaged \$307 less per patient. |
| 19. Home Health Data Tabulation Service, National League of Nursing study, Nov. 1979. | 19 agencies | Urban, rural Suburban. | home care | For all 11,182 reported cases, average cost per case is \$482, or \$10.22 per day; the median cost per case is \$171, or \$6.90 per day. Study shows striking overall improvement in patient condition (5% to 27% independent.) |

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|-------------|------------------------|---|
| 20. Gerson, L and Hughes, OP: "A Comparative Study of the Economics of Home Care." INT J HEALTH SERV, 6: 543-555, 1976. | 583 | --- | home and hospital care | For 13 months, patients were assigned either to home care or hospital care units (in a ratio of 2:1, respectively). The program paid for cost of food, laundry, and other items for both groups to avoid disincentives to home care participation. Of 15 diagnostic groups, length of stay was reduced by home care in 6. Typical savings in provider costs achieved through early discharge seemed to be offset by costs to the patient for food, laundry and other items. |
| 21. Denver Visiting Nurse Service: Cited in: Home Health Care as an Alternative to Institutionalized Care. Homemakers Upjohn, Kalamazoo, Mich., March 1976. | 447 | --- | home care | Between May and November 1973, 447 patients were released to home care - 52 of those patients represented early hospital discharge. The early discharge patients resulted in an estimated average saving of 7.9 days of hospital care and \$648 in charges. |
| 22. Connecticut Blue Cross: Cited by E. Lindsey in: Reported Savings in Hospital Care Through Home Care. State Communities Aid Association, NY 1975. | 526 | --- | home care | This study, conducted from 1970 to 1972, found that on the average, patients saved 21.9 days of hospitalization and cost savings average \$2,175 per referral. |

HOME HEALTH COST-EFFECTIVENESS SUMMARY CONT.

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|-------------|----------------------------|--|
| 23. Michigan Blue Cross: Cited by E. Lindsey in: New Perspectives in Health Care for Older Americans (Recommendations and Policy Directions of the Subcommittee on Health and Long Term Care). Select Committee on Aging, House of Representatives, Washington, D.C., Jan 1976. | 1,157 | --- | home care | Study conducted by Michigan Blue Cross, 1967. Attending physicians estimated the number of hospital days avoided averaged 14.7 days and the provider cost was reduced by \$562 per patient. Researcher found that 4 years of experience with home care is required for physicians to learn to accurately assess what savings in hospital days are generated. |
| 24. White, JW: Cited by E. Lindsey in: New Perspectives in Health Care for Older Americans (Recommendations and Policy Directions of the Subcommittee on Health and Long Term Care). Select Committee on Aging, House of Representatives, Washington, D.C., Jan 1976. | 100 | --- | home and hospital care | Experimental and control groups were used-experimental received home care, control receiving hospitalized care. Cost savings for the care of patients in the experimental group averaged \$850 below that for patients in the control group. |
| 25. Greenberg, J: "The Costs of In-Home Services." In A Planning Study of Services to Non-Institutionalized Older Persons in Minnesota. University of Minnesota, School of Public Affairs, Minneapolis, 1974. | 54 | --- | home and nursing home care | Total costs, including rent and food, of nursing home and homemaker care were calculated for patients who could have been transferred home for care. 27 of 54 patients transferred home could have been maintained at home at a lower cost than in the nursing home. The average savings for a home care patient was \$263 over the nursing home cost. |

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|--|---------------|-------------|---------------------------------|---|
| 26. Good Samaritan Hospital, Cincinnati: Letter from Cornelia H. Ashbury, Association of Home Care Agencies, to Margaret W. Lynch, Under Secretary, DHEW, Oct 5, 1976. | 29 | --- | home and nursing home care | Between January 1 and June 30, 1976, 29 patients were referred to home care. Estimated savings averaged 8.9 days and \$1,495 per patient. |
| 27. Coit, AM, et al: "Home Health 98 Care is Good Economics," Nursing Outlook 632-636, Oct 1977. | 98 | 65 and over | home and institutionalized care | Two groups of older Americans were studied. Group I was composed of 48 patients selected at random; Group II was composed of 50 patients selected randomly from an adjacent community with a similar home maintenance program. The number of days of institutional care prevented was 1,396 days for Group I and 1,144 days for Group II. Program costs were 35% of alternate institutional care costs for patients in Group I, 37% in Group II. Costs of home maintenance were significantly lower than costs of alternate institutionalization. |
| 28. Moore, FM: "New Issues for In-Home Services. PUBLIC WELFARE 26-37, Spring 1977. | 613 | --- | home and hospital care | A study conducted between January 1 and June 30, 1976 revealed that 1,110 hospital days were saved and \$146,150 (net dollar savings) was realized through the use of home care. |

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------|-------------|--------------------------------------|---|
| 29. Associated Hospital Service of New York: Home Care Following Hospitalization in Home Health Services in the United States. In A Report to the Special Committee on Aging. U.S. Senate, Washington, D.C., April 1972, pp. 112-114. | 5,000 | --- | home health care | This study was conducted between 1970 and 1971. 5,000 cases were studied to find the effect of home health care on the length of hospitalization. An estimated average saving of 22.6 days of hospitalization, \$302 in hospital charges and \$428 in subscriber expenses for each patient whose home care expenses were reimbursed. |
| 30. Home Care Association of Rochester: "A Critical Review of Four Home Care Cost-Benefit Analyses. Tenth Annual Report, May 1971, and Twelfth Annual Report, May 1973." (Cost estimates were corrected by Charles Brooks.) Case Western Reserve University, Cleveland, 1976. | 300 | --- | home care | Physicians reported that home health care resulted in early discharge in 83% of the cases (1970) and 30% in 1972. In both years, the average of the estimated reductions in hospitalization was 21 days. 1971 estimated cost savings (for early discharge) was \$1,177. Overall, a saving of at least \$56 was achieved for each home care patient. |
| 31. National Institute for Advanced Studies: "A Review of Home Health Cost-Effectiveness Findings and Methodologies." Office of Planning, Evaluation and Legislation, Health Services Administration, Department of Health, Education and Welfare, Jan 1977. | --- | --- | home, hospital and nursing home care | Home health care is less costly than institutional care at lower levels of impairment, the cost savings tend to disappear as severity of impairment increases. |

| Study | Patient Cases | Demographic | Type Agency | Study Findings |
|---|---------------------------|--|-----------------------------|--|
| 32. Center for Health Services Research: "Cost Per Episode of Home Health Care. Executive Summary." "Office of Planning, Evaluation and Legislation, Health Services Administration, Department of Health, Education and Welfare, March 1979. | 2,800 episodes of illness | Group 1 = 60 to 69 years old Group 2 = younger elders | home and hospital care | Group 1 represents discharged patients to be aided by home care (visiting nurses). Group 2 represents hospital based patients (Blue Cross). Group 1's average number of days and costs/episode equals 18.25 days and \$ 257 as opposed to Group 2's 16.35 days and \$522. The average cost of care for patients who died in their homes was the highest of any patient group. (Episode = the period from the time of admission to time of discharge by a home health care provider for one spell of illness.) |
| 33. Smith, DL: "Cost Effective Analysis of Alternative Care Options...Planning Agencies, First Step Toward Arcwide Policy Development." Home Health Review, 1(2): 19-27, 1978 | | mixed age groups | home and institutional care | Home and clinic costs were compared for chronically ill patients. Clinic costs were almost 20% higher than the home group costs (Gersten 1968). A case study approach, varying in degree of illness, is presented with cost-effectiveness breakdowns. At lower levels of impairment, home health care is less costly, however, cost savings tend to diminish when more severely impaired persons are cared for at home. |
| 34. "GAO and US Commission on Civil Rights Assess Programs for the Elderly." Geriatrics, 15-16, March 1978 | --- | 65 and older | home and institutional care | Institutional care is less costly than home health for only 17 of people 65 and older, those who are more seriously impaired. Those at the seriously impaired level (cost of home health equals cost of institutional care) are receiving over 70% of the value of home care. See Geriatrics and Geriatrics |



HOME HEALTH EVALUATION PLAN

Introduction

Although home health care has just lately come into the spotlight as an increasingly important part of the total health care system, a form of home health services was organized as early as 100 A.D. A group called the Deaconesses provided care for sick people living in Roman slums. During the Crusades, groups such as the Order of St. Anthony's and Lazerus Order provided nursing services in homes. The trend of religious groups providing home health care continued until 1859 when William Rathbone, impressed by home care given his terminally ill wife, promoted the idea of a visiting nurse service in Liverpool, England. Rathbone has been credited for the beginning of public health nursing services.

The slow growth of home health care in the past has been blamed on its initial dependence on philanthropic monies and the start of the Blue Cross program, which paid for only hospital care and which, it has been argued, established America's dependence on hospital care. With the advent of Medicare and Medicaid, home health care was given its single greatest boost and is now growing rapidly.

Table 1
Medicare Reimbursement, Reimbursement for Home
Health Services, and Number of Home Health
Visits Under Medicare, Calendar Years 1969-76
(In millions)

| Total Medicare Reimbursement | | | Home Health Agency Reimbursement | | | Home Health Visits | |
|---------------------------------|---------|-------------------|-------------------------------------|-------------------|--|-----------------------|-------------------|
| Year | Amount | Percent Change | Amount | Percent Change | As Percent of Total Medicare Reimburse- ment | Number | Percent Change |
| 1969 | \$6,276 | --- | \$ 78 | --- | 1.24 | 8.5 | --- |
| 1970 | 6,748 | 7.5 | 62 | -21.2 | .91 | 6.0 | -29.9 |
| 1971 | 7,459 | 10.5 | 57 | - 7.7 | .76 | 4.8 | -20.5 |
| 1972 | 8,174 | 9.6 | 66 | 16.1 | .81 | 5.2 | 9.2 |
| 1973 | 9,562 | 17.0 | 93 | 40.8 | .97 | 6.4 | 22.3 |
| 1974 | 11,847 | 23.9 | 144 | 54.7 | 1.21 | 8.2 | 28.7 |
| 1975 | 14,652 | 23.7 | 216 | 50.1 | 1.47 | 10.8 | 32.0 |
| 1976 | 17,637 | 20.4 | 290 | 34.3 | 1.64 | 13.3 | 23.1 |

Source: Health Care Financing Administration, unpublished utilization statistics. Amounts are for year in which expenses were incurred, based on bills processed through December 1977. Thus, data for most recent years are less complete than data for earlier years.

It is estimated that approximately 14% of the non-institutionalized aged need some kind of home help³⁸, and other estimates show that only 15% of the projected national need for home health services is being met, leaving 2.3 million elderly people in need of home health¹⁶ services.

Montana had 17 licensed home health agencies which had a total operating budget of 1.6 million dollars in 1979, an average cost per patient of \$374 (approximately \$30.40 per nursing visit). Eight home health agencies are administered by local health departments, five by hospitals and four by independent, non-profit corporations.

Expansion of home health services in Montana is being strongly encouraged. The Montana State Health Plan (1979-1980) has called home health services a "viable, beneficial and cost-effective alternative to institutional care" and the Health System Plan (1980) says that "home health care should be available and easily accessible to all Montanans".

The increasing demand has raised interest in the evaluation of existing home health services at the local level, resulting in a two year grant evaluation project, the Community Health Services Evaluation and Planning Project, which began in 1979. The project is designed to provide evaluation methodologies and data for eight public health programs. The Missoula City-County Health Department, under contract with the State Health Department, is responsible for developing evaluation models, testing the methodologies, refining them as necessary, and then distributing "user guides" to the State and local health departments for use in their internal evaluations. The Home Health Evaluation Model will be designed so that health departments may use all or parts of the methodologies to construct management and planning data for their programs.

LITERATURE SEARCH

There is a good deal of published information about home health services, most of which is concerned with home health's cost-effectiveness and its place in the long-term care system.

Although the literature shows some disagreement, it is generally agreed that home health care is less expensive than hospitalization. Little information is available about home health's intangible benefits such as patients remaining in their own homes and evaluation of home health programs is almost unknown in the literature. A brief review of some of the more pertinent literature follows:

Seidl, F., Austin, C.,
Green, D. "Is Home
Health Care Less
Expensive?"

Looks at analysis of cost in terms of costs of alternative services, identification of clients, case management, efficiency and quality of service and the payor of the alternative service. Concludes that until studies use the five categories listed, "arguments for home health care based on cost are for the most part unfounded and should be avoided by those who wish to advocate (HH) services."

Daubert, E. "A System to Evaluate Home Health Care Services"

Describes the methodology of a patient-care review program, which used a record audit to review 28 criteria and showed a 77% decrease in deficiencies in patient care.

Kisten, H., Morris, R.
"Alternatives to Institutional Care for the Elderly and Disabled"

Explores the concept of inappropriate use of nursing homes for patients who could have been served in their homes. Points out that the Massachusetts State Health Department estimated that only 37% of the 100,000 patients in licensed nursing homes needed full-time, skilled nursing care.

Hammond, J. "Home Health Cost/Effectiveness: An Overview of the Literature"

Reviews available literature concerning home health cost-effectiveness and suggests that home health care is less expensive than extended hospitalization in the view of third party payors. Available information also indicates that the costs of home health care and nursing home care are approximately equal for patients requiring the same level of care.

Doherty, N. Hicks, B.
"Cost-Effectiveness Analysis and Alternative Health Care Programs for the Elderly"

Describes a technique for determining cost-effectiveness of alternate health care programs. Stresses comparison of programs against outcome criteria.

Special emphasis in this evaluation project was given to the data needs of home health program administrators in order to determine what evaluation information would be of the most use to them and their programs.

- David Feffer, Health Officer; Crystal Day, Nursing Director, Missoula City-County Health Dept., Missoula, MT
- Edward King, Health Officer; Jackie Stonnel, Nursing Director, Gallatin City-County Health Department, Bozeman, MT
- George Sheckleton, Health Officer; Jan Trembl, Deputy Health Officer, Yellowstone Health Department, Billings, MT
- Bruce McIntyre, Health Officer; Audry Gonzales, Nursing Director, Flathead City-County Health Department, Kalispell, MT
- Bill Burke, Health Officer, Cyrilla Meade, Home Health Director, Silver Bow Health Department, Butte, MT

- Camilia Flemming, National Council of Homemakers and Home Health Aides, New York, NY
- Bill Halamandaris. Ron Kolanowski, National Association for Home Health Agencies, Washington, DC

METHODS OF PROCEDURE

The majority of home health patients are 65 years of age or older. Analysis of the size of the elderly population shows there were 32.8 million elderly in 1977, nearly a seven-fold increase from 1900, when there were 4.9 million elderly. Current Census Bureau projections show a 40% increase in the total population from 1977 to 2035, compared to an over 100% increase in the number of elderly in the United States. Home Health administrators, then, must be concerned not only with the quality and efficiency of their current programs, but also must plan their programs to handle the demands of the future.

This evaluation is designed to answer not only quality questions, but also to examine some cost-effectiveness issues of alternate long-term care. Evaluation objectives, established to measure attainment of goals, are listed, with explanations of the rationale for each objective, methodology to be used in measuring the evaluation, and uses of resultant data.

OBJECTIVES

1. To provide home health services to 12 patients per 1000 population in FY 1981. *Sections 3,4*
2. To provide home health services which effectively meet patients' and their families' needs for type, quality and availability of services. *Ineffective*
3. To determine the financial impact of providing home health services to the community. *Section 5*
4. To determine the costs of providing home health services per diagnosis, per visit, per case and per average number of visits. *Section 5*
5. To conduct home health nursing audits accurately reflecting quality of patient care. *Section 1*

Objective 1: To provide home health services to 12 patients per 1000 population in FY 1981.

Rationale: Generally, estimates show that approximately 14% of the aged are in need of home health services (Shanas^{29,38}). Although there is no generally accepted way to determine the number of potential home health clients in an area, assumptions of 12 per 1000 appear to be reasonable (Montana Health Systems Agency, 1981). On a county level, many home health administrators feel that their programs are not reaching enough of the population in need. For example, Missoula home health agencies currently serve about 100 patients per month, but according to the 12 per 1000 estimate, there are approximately 900 people in need of services.

Methodology: Since home health programs depend on calls for service, referral patterns are important. Tracking referrals to home care will be an important measure of whether public information and other efforts to inform potential patients and the medical community are working. A referral log will be kept to summarize referral forms to record: referral source, action taken on followup, appropriateness of referral and reason if any patients do not receive home health care after a referral. A protocol will be developed to determine the level of "appropriateness" of each referral.

Different methods of increasing public information and referrals will be tried and their results will be tracked on the referral log by number of appropriate referrals.

In addition, a personal survey of hospital discharge planners and selected physicians will be conducted to determine reasons for referring patients to home care and reasons why other patients are not referred. The survey will ask about their perceptions of home health services, if any patients reported back about their experience with home care, how planners base their discharge recommendations, and how they feel home care fits into the health care system.

Use of Data: Especially if new or additional emphasis is placed on home health's public relations, referral patterns seem to be the best way to track the effects of public relations. Information from the physician and discharge planner survey can determine whether or not those sources understand and are willing to utilize home health. If problems exist, then further efforts can be made to solve problems of non-utilization.

Objective 2: To provide home health services which effectively meet patients' and their families' needs for type, quality and availability of services.

Rationale: Home health services include not only skilled nursing, personal care, referral to community resources, such as homemakers, home chores, and nutrition programs, but also direct communication with patients and their families. Evaluation of nursing care is covered by the four times per yearly audits as required by federal regulations. This objective is designed to see what patients think about their home health care and to insure that program managers have the necessary information to effectively meet patient's perceived needs. Although it would be valuable to measure intangible benefits of home health care, it is almost impossible to assign a value to healing faster, being able to stay in one's own home, etc.

Methodology: Two mail surveys will be utilized. One, to be mailed directly to newly discharged patients (capable of filling out a questionnaire), will ask questions about how the patient felt about the length of the nurse's visit, the clarity of patient-nurse communication, how the nurse is perceived, and quality of services. The other questionnaire, to be mailed to the patient's family if the patient is unable to respond because of death or disability, will ask for the same information as the patient survey.

Changed
Section 4
Section 3

Ineffective -
See Page 2

The confidential surveys will be designed to show the length of time spent on home health and the patient's diagnosis in order to determine whether different medical conditions affect patient response. A pre-test currently underway indicates a better way to conduct the survey would be to survey all patients on home health in a one week period in order to get sufficient numbers from which to draw conclusions. (See pages 9 and 10 for sample surveys.)

In conjunction with the patient and family surveys, personal interviews will be conducted with a sample of physicians who (1) consistently refer patients to home health, (2) have referred only a few patients to home health, and (3) have never referred any patient to home health. This short interview will see if physicians understand home health care, what they think of care their patients have received and reasons for not referring patients to the program.

Use of Data: The information provided by Objective 2 will suggest areas of needed improvement of services as well as give program managers an idea of which parts of home health are particularly appreciated by users and physicians. Although the main reason for surveys is information, an additional benefit is often the favorable image projected by an agency perceived as truly concerned with the quality of its services.

Objective 3: To determine the financial impact of providing home health services to the community.

Rationale: A considerable share of the home health literature concerns cost effectiveness. It is generally agreed that home health care is less expensive than hospital or nursing home care in certain instances, and has the potential to be more expensive in cases of long-term, severe disability. Studies show savings that range from \$187 per patient (Berger²⁴) to \$2,175 (Conn. Blue Cross²⁴) estimated on early hospital discharge to home health care; and \$263 (Greenberg²⁴) to \$1,495 per patient on home care *vs* nursing home care.

Several authors, most notably Gerson and Hughes,²¹ argue that the only costs relevant in an economic comparison of the two modes of treatment are those attributable to the direct care of the patient. When they compared two similar diagnoses, there is basically no difference in cost between home care and hospital treatment. For review of relevant cost analysis, see pages 11 through 20.

Methodology: In order to accurately determine the financial impact of public health's home health programs, several contingencies must first be met: first, similar diagnoses must be compared between home health and long-term care; second, similar patient characteristics (financial, living arrangements, etc.) must be compared; and third, all relevant costs of care must be considered. To show these factors, a table will be constructed to show each input for each different patient case with the end result a dollar figure comparing home health with hospitalization (especially early discharge) and nursing home care.

Section 5

Section 5

Use of Data: A caution must be noted here - this data will be of use to program administrators because of its application to Montana programs and how home health costs can be determined for Montana patients. (It remains to be seen if these cost figures will compare to national and large urban data.) These cost figures can not cover the "intangibles" of home health care, i.e. the psychological benefits of patients staying in their own homes in familiar environments, with emphasis on family relationships and patient dignity. The argument has been made that in the movement to show the benefits of home care, only visible costs are shown. This evaluation recognizes the importance of intangible benefits, but currently, no method is available to include them.

Objective 4: To determine the costs of providing home health services per diagnosis, per visit, per case and per average number of visits.

Rationale: Home health audits (such as the Medicare Cost Report) provide data on cost per visit and per discipline but many program administrators need additional general information, including data on the "average patient" served by their agency. The average patient, a composite of all data for separate diagnoses, lengths of service and cost of supplies and nursing time, will give a thumbnail sketch of what cost and length of time on service can be expected when a patient with "x" medical condition is accepted in the program.

Methodology: The procedure for determining the average patient profile will closely follow the National League for Nursing's 1974 study¹⁴ showing the average home health patient in large urban areas to be:

- 69 years old
- female
- referred by a hospital
- served for 36 days
- on home health for circulatory or neoplasm as the primary diagnosis
- discharged from home health because of recovery or stabilization

The NLN utilized a discharge summary (see page 21) which can be used by evaluators to provide summary data for study purposes or included on existing forms and summarized later.

Cost information will be provided by completing "cost analysis" worksheets for a sample of cases and diagnoses similar to those developed for communicable disease and which includes both direct and indirect personnel costs, costs of providing nursing supplies and travel.

Use of Data: Whether involved in health planning, budgeting, staffing or preparing public information, program managers can use cost data to track either one-year costs or long-term changes. Often listed as the most important program information to have, cost data is probably the most important component of a public health program.

Objective 5: To conduct home health nursing audits accurately reflecting quality of patient care.

Rationale: Measuring nursing quality is difficult because of great variability not only in patient needs, but also among judges of quality. The nursing profession has developed peer review and the nursing audit as two ways of self-regulation and of insuring quality of patient care.

In the home health field, federal regulations require that a nursing audit be conducted four times per year. Generally, home health agencies respond by using a developed audit tool applied by independent nurses on contract to review the nursing quality of closed cases. Use of a particular audit tool is not specified by the regulations.

Methodology: Although it is generally agreed that nursing audits are important, there are a good many ways to audit. A survey will be taken of all in-state and selected out-of-state home health agencies to review each's audit tool and the advantages and disadvantages of each. The audits will be reviewed by home health professionals and analyzed for efficiency in use and results. A listing will be compiled to show available audits and results of the review.

Section I

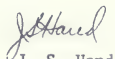
Use of Data: Information on available audit tools and the successes of each in a home health setting will be of value to program managers who are either looking for a new audit system or who are interested in comparing their present audit to those used by other agencies.

IMPLICATIONS OF EVALUATION

The design of the Home Health Evaluation Plan allows for individualization of its information and procedures to fit express needs of health departments. Administrators can use all or parts of the evaluation as needed. Missoula's final evaluation results will be available to any administrator who would like to use the data as a comparison or as a reference.

Although the evaluation is designed to use already existing documents as much as possible, there could be some changes necessary in procedures and staff time needed to complete the evaluation work. As staff become familiar with procedures, use of employee time will diminish.

Since most of home health literature is concerned with large urban areas and proprietary or hospital-based home health agencies, consideration should be given to publication of results of the home health evaluation.


J. S. Hand
MCCHD
9/80

HOME HEALTH AGENCY DISCHARGE FORM

1. Name of Agency _____ Code No. _____

2. Patient Name _____ or Case No. _____

3. Year of birth (add last two digits only)

4. Sex: 1. Male 2. Female

5. Living arrangement: 1. Alone 2. With others

6. Source of referral:

1. Self 2. Family physician 3. Private physician 4. Hospital 5. Health department 6. Other (specify) _____

7. Source of physician care:

1. Clinic 2. Family physician 3. Health group 4. Other (specify) _____

8. Experience with hospitalization within two weeks of admission:

1. Yes 2. No If yes, hospital discharge date _____

9. Date of admission to home health agency _____

10. Date of last visit by home health agency _____ (Length of service will be determined by computer)

11. Date of discharge from home health agency _____

12. Primary diagnosis responsible for admission _____ (See diagnostic groupings)

13. Total number of diagnoses (including primary)

14. Services provided: Total number of visits by:

a. Registered nurse

b. Licensed practical nurse

c. Physical therapist

d) Occupational therapist

e) Speech therapist

f) Medical social worker

g) Home health aide

h) Other _____

(Specify)

15 Other services (check)

1 Home care services

2 Home care services

3 Other _____

(Specify)

16 Others participating in care (check):

1 Household members

2 Other (describe) _____

Reason for discharge

1 Patient recovered

2 Moved out of district

3 Referred to hospital

4 Referred to SNF

5 Deceased

6 Referred to another agency

7 Other _____

(Specify)

PRIMARY DIAGNOSTIC GROUPINGS

From the International Classification of Diseases

Infective and Parasitic Diseases

Neoplasms

Allergic, Endocrine System, Metabolic, and Nutritional Diseases

Diseases of Blood and Blood Forming Organs

Mental, Psychoneurotic, and Personality Disorders

Diseases of Nervous System and Sense Organs

Diseases of Circulatory System

Diseases of Respiratory System

Diseases of Digestive System

Diseases of Genitourinary System

Diseases of Skin and Subcutaneous Tissue

Musculoskeletal System and Connective Tissue

Symptoms, Senility, and Ill-Defined Conditions

Injury and Adverse Effects

HOME HEALTH EVALUATION SUMMARY

| INSTRUMENT | TO MEASURE | PROCEDURE | OBJECTIVE |
|--|--|--|-----------|
| Referral log and "appropriateness" protocol. | Referral source, action taken; appropriateness of referral. | Develop referral form protocol. | 1 |
| Hospital discharge and physician survey. | Reason for (and not) referring patients and perceptions of home health. | Personal interviews. | 1 and 2 |
| Mail surveys to patients and families. | How patient sees service and if needs are met. | Develop and utilize questionnaire. | 2 |
| Physician interviews. | Reasons why physicians refer (1) many patients, (2) some patients and (3) no patients. | Personal interviews. | 2 and 1 |
| Home health hospitalization, nursing home cost comparison. | Financial impact of home health care. | Cost analysis | 3 |
| Cost data. | Show profile of selected conditions of home health patients. | Cost analysis. | 4 |
| Nursing audit search. | To find more effective audit tool. | Survey of other home health agencies in the state and country. | 5 |

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USERS' GUIDE

FOR

SUBDIVISION REVIEW
PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J.S. Hand) under Contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE
Subdivision Review Program Evaluation

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| Section 3. | What Do Others Think of the Subdivision Program? — An Opinion Survey |
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INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates four ways to evaluate your Subdivision Review Program — from a cost analysis to sewer failure records. The evaluation methodology is a result of the two year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The evaluation project's goal is to provide practical, efficient evaluation methods that public health administrators can use when evaluating their own programs.

Scope of Subdivision Review Program Evaluation - Because measuring both outcome (sewer failures) and process (time taken for processing submittals) is important to many program administrators, this evaluation shows methods for both.

Each evaluation methodology is designed to smoothly fit into your health department's existing program and to produce clear and immediately usable data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's program and data. You may need to modify some parts of the evaluation to fit your program's features or expand the evaluation to other disease programs.

Each section of the Guide shows Missoula's results, discusses evaluation procedures, reviews evaluation models and provides forms used to collect data. The Montana Subsurface Treatment and Disposal System Failure Survey, the Cost Analysis Worksheets, and the Action Log are all copy-ready.

Changes from Original Evaluation Plan - An evaluation plan is only a brief outline of proposed work. Parts of the original Subdivision Review Evaluation Plan proved infeasible, so they were revised. This includes the Action Log mentioned in Objectives 1, 3 and 4. Both a suggested form for an Action Log (page 4.2) and a Time Sheet format (page 4.3) are provided in Section 4. The Missoula Health Department preferred their own time sheet format because that form had been in use for several years and staff was familiar with it.



SECTION 1

SEWER SYSTEM FAILURES - AN OUTCOME MEASURE OF INSPECTIONS

Results - Before the Sewer Failure Record, the Missoula Health Department did not keep reports on system failures. During the test period (FY 1981) of this evaluation, Missoula had six sewer system failures. They were each analyzed and recorded on the failure form. One copy of each failure record was sent to the Subdivision Bureau.

Analysis of the failure records showed that two failures could be attributed to an incomplete inspection, and the rest were operation failures (alteration of house size, improper ground cover over system, industrial failure caused by grease emulsification, and system undersizing due to faulty soil classification). A staff meeting was held and problems pinpointed by the evaluation were discussed.

Discussion - The strength of keeping records about location, type, soil, reason, and description of failures is historical. Over a year or more, trends can appear illustrating specific problems. For example, if a proportionately high number of incomplete inspections are cited as reasons for failure, then more staff training could be needed. If a large number of sewer failures result from improper maintenance, a consumer information sheet could be produced to show owners how to maintain and use their septic systems.

Methodology - Each time someone applies for a replacement permit, fill out a Sewer Failure Survey. Keep one copy in a historical file and send one copy to the State Subdivision Bureau for inclusion in a state-wide information system.

Each quarter (or monthly, semi-yearly, or yearly), a program manager should review the file to see what, if any, actions should be taken to correct any consistent problems the sewer failure form brings to light.

MONTANA SUBSURFACE TREATMENT & DISPOSAL SYSTEM
FAILURE SURVEY

date installed/reported failed _____

permit # _____

replacement permit # _____

owner's name: _____ address: _____

section, _____, T _____ N, R _____ W installer: _____

TYPE OF DESCRIPTION OF SYSTEM (Please specify size of tank, amount of drainfield, etc. or provide copy of permit)

☐ septic tank ☐ metal ☐ concrete ☐ plastic

☐ seepage pit size _____

☐ drainfield length _____ depth to bottom pipe _____

☐ other _____

SOIL DESCRIPTION

soil type: _____

system located in: ☐ fill material _____ ☐ native material _____

minimum depth of groundwater at drainfield site _____

has this area ever been flooded? ☐ yes . . . if yes, why? _____

☐ no

PROBABLE REASON(S) FOR FAILURE (Please rank appropriate, using "1" for most important reason, "2" for second most important, etc.)

Drainfield

Septic System

☐ high water table

☐ lack of pumping

☐ impervious soils

☐ age

☐ steep slopes

☐ baffles

☐ under-design

☐ over-use

☐ improper construction

☐ septic tank collapse

☐ depth draintile

☐ other: _____

☐ over-use

☐ age

☐ other: _____

DESCRIPTION OF FAILURE

DESCRIPTION OF REPLACEMENT SYSTEM

name installer _____ type _____ size _____

date: _____

form completed by: _____

SECTION 2

COST OF THE SUBDIVISION REVIEW AND CERTIFICATE OF SURVEY PROGRAMS

Results - Missoula's Subdivision Program costs \$28,512 in fiscal year 1980. This included \$19,748 for personnel costs, \$835 for water tests, and \$7,929 for mileage, training and department overhead costs. It is estimated that fiscal year 1981's costs (due August 1981) will be about the same or lower because fewer plats and certificates of survey were submitted.

Discussion - Information used to complete the cost analysis is easy to collect. The Action Log (Section 4) provides the amount of time and mileage spent on each submittal. To be as accurate as possible, program costs should come from the Log. You can use estimates, but the analysis's over-all accuracy will be reduced.

The cost information can be easily calculated each year and used to project program costs for budgeting and program planning.

Methodology - See the detailed explanation on the back of the program costs analysis (page 2.4).

OVERHEAD

Health Department Cost Analysis

The purpose of this cost analysis is to provide a basis for the determination of the overhead costs of the health department. The overhead costs of the health department can be fairly allocated to each individual health department program.

1. Administrative Salaries

| | |
|-----------------------------|-------|
| a. Health Officer | _____ |
| b. Administrative Assistant | _____ |
| c. Administrative Secretary | _____ |
| d. H.D. Receptionist | _____ |
| e. H.D. Accountant | _____ |
| f. Vital Statistics Clerk | _____ |
| g. Medical Consultant | _____ |
| h. Other | _____ |
| x _____ | _____ |

2. Other Administrative Personnel Expenses

| | |
|-----------------------------------|-------|
| a. Termination Reserve | _____ |
| b. Recruitment | _____ |
| c. General Conferences & Meetings | _____ |
| d. General Training | _____ |
| e. General Expenses - Medicals | _____ |
| f. Administrative Travel | _____ |
| g. Other | _____ |

3. Other Administrative Expenses

- a. All Office Supplies _____
- b. All Copies and Printing _____
- c. All Postage _____
- d. Office Equipment & Maintenance _____
- e. All Telephone Charges _____
- f. Interest on Warrants _____

_____ admin. expense
(c)

4. Building and Maintenance

- a. Rent OR \$_____ per sq. foot
x number of sq. feet of office,
lab, etc. _____
- b. Maintenance _____
- c. Utilities _____
- d. Insurance _____
- e. Other: _____

_____ building and
maintenance
(d)

5. Other Overhead Expenses

Other: _____

_____ other expense
(e)

TOTAL OVERHEAD COSTS = []

Overhead Computation -- $\frac{a + b + c + d + e}{\text{total H.D. salaries + fringe}}$ = OVERHEAD (30%)

OVERHEAD

Health Department Cost Analysis

example, for a person assigned to calculate the total costs of administrative programs. It should be noted that overhead is an estimate of the costs of general administration of all department programs, and not of a specific program, the need for an overhead figure.

Total Administrative Salaries

This means salaries plus appropriate yearly fringe benefits and merit raises of only personnel involved in the general administration of the health department. (Other personnel may be added if other departments are organized differently. For example, a health department personnel director or assistant health officer should be added to this category.) The receptionist is the person who acts for the entire health department, the general office clerk (or a portion of her/his salary) acts as vital statistics clerk.

To calculate (a), or total administrative salaries, multiply total salaries (which should include yearly raises) by yearly fringe percentage.

Other Administrative Personnel Expenses

"Termination Reserve" means those monies set aside to pay vacation and sick pay severance to employees who quit. "Recruitment" means costs budgeted for newspaper ads, printing and other costs of filling vacant positions. "Conferences and Meetings" refers to those of general interest to health administration and not applicable to a specific program. "Training" means general management or administrative training, not that attributable to a specific program. The "Books and Periodicals" category includes general health planning, public health, and management materials of general interest and not attributable to a specific program. "Travel" means general health department trips and excludes travel for specific programs or conference travel (to be included under "Conferences and Meetings"). Blanks are provided for other categories specific to the general administration of a health department. Add all these categories to get Total Administrative Personnel Expenses (b).

Other Administrative Expenses

Expenses in this category are those which are general to the running of an agency. Since it is virtually impossible to split out the number of pencils, pieces of paper and the like used by one program or activity, it is a good deal easier to include these as a total category and be able to easily allocate them in the department overhead computation. (The only exception to this would be grants where administrative expenses are each listed and funded separately and should be allocated as such.) Office supplies, copies and printing, postage, office equipment and phone are total costs per year for the whole department excepting grant allocations. Interest on warrants is interest paid on monies borrowed from a bank to cover current department operating expenses (if applicable). Other administrative expenses should be included in this category if they are attributable to the general operation of a department. (Note: It is more accurate and easier to charge vehicle expenses to the program which uses them on a cents-per-mile basis. It is also a good deal more difficult to charge phone, office space and the like out on a program-by-program basis.)

Building and Maintenance

Housing costs are to be included in the overhead computation because of the difficulty of allocating square footages, utilities, phones, etc., to each program or activity. This category should cover all housing expenses of the department and laboratory.

Other Expenses

This category should include costs of routine audits, administrative consultation, depreciation on capital, or other similar items.

SUBDIVISION PROGRAM

Cost Analysis

The purpose of this cost analysis is to provide a formula to determine the costs to the Health Department of conducting subdivision reviews.

| | COS | PLAT |
|--|---------------------------|---|
| 1. <u>PERSONNEL</u> | | |
| a. Sanitarian time x (salary + fringe) | | |
| PLAT | | _____ |
| COS | _____ | |
| b. Clerical time x (salary + fringe) | _____ | _____ |
| c. Engineer time x (salary + fringe) | | _____ |
| d. Other: | _____ | _____ |
| 2. <u>ENVIRONMENTAL HEALTH ADMINISTRATION COSTS</u> | | |
| a. Environmental Health Director | | |
| PLAT | | _____ |
| COS | _____ | |
| b. Other: | _____ | _____ |
| 2c. Total Personnel Costs | _____ | |
| 2d. Total Combined PLAT and COS Costs | _____ | |
| 3. <u>MILEAGE</u> @ ____¢/mile | _____ | |
| 4. <u>TRAINING, BOOKS AND PERIODICALS</u> | _____ | |
| 5. <u>OVERHEAD</u> @ % x (total salaries + fringe) (2d) | _____ | |
| 6. <u>OTHER:</u> | _____ | |
| | <u>Total Program Cost</u> | <div style="border: 1px solid black; width: 100px; height: 30px; display: inline-block;"></div> |

PROCEDURE
Subdivision Program Cost Analysis

Note: Each health department has its own system of tracking personnel and mileage costs. This cost analysis, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation. The Subdivision Cost Analysis is split into two sections to show separate costs of (1) subdivision plat review and (2) certificate of survey (COS) review.

1. **PERSONNEL:** There are three ways to calculate personnel time: (1) from the Action Log, which gives exact time spent on each submittal, (2) from department time records, or (3) from estimates. Personnel time should include time spent on the telephone and other less obvious time. Use hourly salary figures (or an average, if more than one sanitarian is involved in subdivision review) and add the appropriate fringe benefit percentage.
2. **ENVIRONMENTAL HEALTH ADMINISTRATION COSTS:** This category shows direct administrative costs which are the costs of directing and supervising the program. These costs can be calculated as a percentage of total program personnel costs (10% is a good rule-of-thumb) or from time records.
3. **MILEAGE:** If accurate records are not available, mileage can be calculated as a proportion of total environmental health time, or:
 1.
$$\frac{\text{Total Subdivision Program Hours}}{\text{Total Env. Hlth. Hours}} = X\%$$
 2.
$$X\% \text{ times Total Yearly Mileage} = \text{Subdiv. Program Proportional Mileage}$$
4. **TRAINING, BOOKS AND PERIODICALS:** These should be only costs specific to the Subdivision Program. Costs which are general should be allocated to Department overhead (see Overhead Cost Analysis).
5. **OVERHEAD:** This category provides a way to include building, maintenance, and general health department administration (health officer, accountant, other administrative support) in program costs. See Overhead Cost Analysis to determine health department overhead percentage.
6. **OTHER:** Any other costs not already included in the above five categories. (Such as laboratory costs, etc.)

SUBDIVISION PROGRAM

Cost Analysis

For FY 80
1 actual
2 estimated
 gph 1/25/81

1. PERSONNEL

a. Sanitarian time (Salary + fringe)

COS
 n=334

PLT
 n=30

PLAT 100 hrs ^{② From FY budget} @ \$8.32 average salary = 832
 13.3 fringe*
 965

\$ 965

COS From cost analysis (1980)

1274 hrs @ \$8.32 average salary = \$10,599 + 1645 fr.* =

\$12,244

Plat: (3hrs/submittal) @ 30 (\$5.08 average salary) = \$457 + 73 fr.* = 530

\$ 156

\$ 530

Cos: (5 minutes / COS) @ 334 (\$5.08) = \$135 + 21 fr.* = 156

\$3,427

① actual from time sheets

331 hrs x 75% (time spent on plats)
 (248 hrs) (\$11.41) = 2454 + 473 fr.* = 3427

*Fringe percentage used = 16%

2. ENVIRONMENTAL HEALTH ADMINISTRATION COSTS

a. Environmental Health Director @ 172 hrs subdivision ^{① From time sheets}

PLAT @ 75% of total time on subdivision

\$1,182

.75(172) = 129 (\$11.91) = \$1536 + 246 fr.* =

COS @ 25% of total time on subdivision ^①

.25(172) = 43 (\$11.91) = 512 + 82 fr.* =

\$ 594

b. Other:

c. Total Personnel Costs \$13,044 \$6,704

d. Total Combined Plats and COS Costs \$19,748

this figure is used to compute the off percentage

3. MILEAGE

① est. /sanitarian 18.50 (15000 total est. mileage) + 800 = (10,700 miles) (18.54 /mi) = \$1,980

\$ 1,980

4. TRAINING, BOOKS, AND PERIODICALS

\$ 25

5. OVERHEADS @ 30% x (total salaries + fringe) =

\$5,924

\$19,748 x 30% = \$5,924

6. OTHER: water testing @ \$5.00 ^{② From cost study (1980)}

\$ 835

\$5 x 167 (about 1/2 of all COS are sampled) = 835

Total Program Cost \$28,512

SECTION 3

WHAT DO OTHERS THINK OF THE SUBDIVISION PROGRAM? AN OPINION SURVEY

Results - The Missoula Subdivision Survey showed that a high percentage of respondents see the local health department as courteous, fair, and professional, but a significant percentage also see the department as inflexible, slow, inefficient, and inconsistent. Respondents see the State Health Department as generally courteous & knowledgeable, but also overbearing, inflexible, slow, inefficient, and inconsistent. Thirty-one respondents were asked questions about both health departments' attitudes, procedures, and enforcement and gave frank answers during personal interviews. (See page 3.7 for complete report.)

The Missoula Health Department used the Subdivision Opinion Survey to improve its procedures and contacts with people making subdivision submittals. The survey resulted in plans for a monthly newsletter to keep submitters current with rule changes, new requirements and rule interpretations. Staff and program administrators discussed survey findings to see where they could improve the program.

Discussion - Conducting an opinion survey is an excellent way to get feedback from other agencies, firms and individuals. The results of the Missoula Survey were very well received by staff and administration alike. In addition, respondents like the idea of the Health Department asking for their input. This helps create a good department public image.

If your department does not have an experienced survey interviewer to conduct a survey, we recommend you hire one. Personal surveys like this one are difficult to conduct because so many of the responses are based on subjective opinion. In addition, almost each individual, firm, and agency surveyed could have different types of businesses with the health department — legal, engineering, real estate, etc.

All responses must be thoroughly explored and the interviewer must know when to tactfully probe for more information if a respondent hesitates or looks doubtful.

Methodology - You may want to make changes in the questionnaire if it will not result in the information you need. If you do want to add or change questions, be very careful that they are very specific and clear (ambiguous questions will give you ambiguous results), and be sure the questions are not biased toward a particular response.

1. Sample Size — The best procedure is to make a list of all developers, surveyors, realtors, lawyers, engineers, geologists, and government agencies who deal with your department on subdivision review. Then rank each with a "+" for people known to be positive toward the department, "-" for people known to be negative toward the department, and "0" for people who probably have neither positive nor negative feelings. Then

choose at least three from each category of developers, surveyors, realtors, etc. Be sure that you have one negative, one positive, and one neutral person in each category.

2. Appointments — Send a letter (sample page 3.3) to each potential respondent, announcing the study and asking for an appointment. This letter insures that respondents are aware of the study and their role.

About one week after the letter is mailed, telephone each respondent to ask for a 20 minute personal interview. (Be sure to allow for travel time between interviews and for longer-than-expected interviews.)

3. Interviews — Be prompt. You are using some of the respondent's business time.

Establish rapport with respondent before conducting the interview. Explain the survey again, answer questions fully and stress that all answers you get are completely confidential — you will not release individual answers, or in any way connect respondents with their answers. Unless the respondent feels secure with the interviewer and with confidentiality, you will not get honest answers.

Read each question exactly as it is written. Record all relevant information and comments.

Conclude with a sincere thanks for the respondent's help and time.

4. Compiling Results — It seems easiest to first tabulate all questions with set respondent reply categories, close-ended questions (#1,2,3,4,5,7,8,9,10,11, 12,13,14), then sort questionnaires into piles with similar responses for each question (#6,11,12,14,15,16). Count each "sort."

Do not report any responses that come from only one or two respondents. This preserves confidentiality and adjusts for individual bias.

Analyze results and write report for Subdivision Program administrators and a shorter summary report if you would like to give respondents feedback.



September 2, 1980

...MAKING A DIFFERENCE...

As part of an over-all evaluation of the Missoula Health Department's subdivision review program, I will be conducting personal interviews with people, firms, and other agencies who deal with the Department on certificate of survey and subdivision review business. I would like to interview you about the review rules, Department attitudes, clarity of instruction, personnel and any problems you have encountered with the Health Department.

The survey is being conducted by the Research and Evaluation Unit of the Health Department. Survey results, to be held in strict confidence, will be used to improve the subdivision review program.

I will call next week to ask to set up a 20 minute personal interview with you. Your helping with this survey will mean that your office will have input in improving the services the Health Department provides and an opportunity to offer advice.

Sincerely,

Janice S. Hand
Research Specialist II

JSH:slp

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OPINION SURVEY
SUBDIVISION PROGRAM

Introduction

The purpose of this survey is to find out how others see the Environmental Health Division of the Local Health Department. The Health Department will use the data to improve its procedures and correct any deficiencies the survey reveals. Your answers are completely confidential - no name will appear on the questionnaire and I will not release answers. I would appreciate your frank replies.

1. In general, what would you say is the local Health Department's main concern? Would you say the Department is concerned . . .

- ☐ only with the environment,
☐ mostly with the environment,
☐ mostly with rules and regulations, or
☐ only with rules and regulations?

2. In general, how would you describe the local Health Department's attitude toward you and your firm/agency? For instance, would you say the Department is: (Circle category nearest response; 0 = neutral.)

| | OR | | | |
|----------------------|----|---|---|------------------------|
| overbearing | 1 | 0 | 1 | lax |
| flexible | 1 | 0 | 1 | uncompromising |
| friendly | 1 | 0 | 1 | unfriendly |
| gives complete info. | 1 | 0 | 1 | incomplete information |
| gives clear info. | 1 | 0 | 1 | confusing information |

3. How about the State Health Department? Would you say they are:

| | OR | | | |
|----------------------|----|---|---|------------------------|
| overbearing | 1 | 0 | 1 | lax |
| flexible | 1 | 0 | 1 | uncompromising |
| friendly | 1 | 0 | 1 | unfriendly |
| gives complete info. | 1 | 0 | 1 | incomplete information |
| gives clear info. | 1 | 0 | 1 | confusing information |

4. In all your dealings with the local Health Department, do you feel you have been treated:

| | | |
|-----------------|------------------------------|-----------------------------|
| fairly? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| courteously? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| efficiently? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| professionally? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| knowledgeably? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| consistently? | <input type="checkbox"/> yes | <input type="checkbox"/> no |

5. In all your dealings with the State Health Department, do you feel you have been treated:

| | | |
|-----------------|------------------------------|-----------------------------|
| fairly? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| courteously? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| efficiently? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| professionally? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| knowledgeably? | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| consistently? | <input type="checkbox"/> yes | <input type="checkbox"/> no |

6. Speaking of certificate of survey review, what benefits do you see from the local health department conducting COS review rather than the State Health Department?

Negative aspects? _____

7. During the certificate of survey review process, which agency do you see as the most difficult to work with? (*Check one.*) The easiest? (*Check one.*)

| Most Difficult | Easiest | |
|--------------------------|--------------------------|-----------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | a. local health department |
| <input type="checkbox"/> | <input type="checkbox"/> | b. State Health Department |
| <input type="checkbox"/> | <input type="checkbox"/> | c. county surveyor's office |
| <input type="checkbox"/> | <input type="checkbox"/> | d. county attorney's office |

8. Now, speaking of subdivision review, do you feel existing subdivision requirements are effective in protecting the ground water?

☐ yes
☐ no

9. Do you feel the local Health Department is effectively enforcing existing subdivision regulations?

☐ yes
☐ no

10. Compared to five years ago, would you say that the local Health Department has improved, stayed about the same, or gotten worse in its general subdivision review process?

☐ improved
☐ stayed same
☐ gotten worse

11. Are there parts of either certificate of survey or subdivision review that you find particularly unclear or confusing?

___ yes--> _____

___ no

12. Do you feel there are too many changes in subdivision regulations from one time to another?

___ yes --> _____

___ no

13. During the subdivision review process, which agency do you see as the most difficult to deal with? (*Circle one.*) The easiest? (*Circle one.*)

Most
Difficult Easiest

- | | | |
|-----|-----|-------------------------------|
| ___ | ___ | a. local health department |
| ___ | ___ | b. State Health Department |
| ___ | ___ | c. county commissioners |
| ___ | ___ | d. city council |
| ___ | ___ | e. city-county planning board |
| ___ | ___ | f. city-county planning staff |

14. Have you ever had any problems with the local Health Department that were not resolved to your satisfaction?

___ yes--> _____

___ no

With the State Health Department?

___ yes--> _____

___ no

15. Who do you usually work with at the local health department? _____

How is he/she to work with? _____

16. What suggestions do you have to improve Health Department relations with your firm/agency and the Health Department's information and enforcement efforts?

REPORT

MISSOULA SUBDIVISION SURVEY

SUMMARY

The Missoula Subdivision Survey showed that a high percentage of respondents see the local health department as courteous, fair and professional, but a significant percent also see the department as inflexible, slow, inefficient, and inconsistent. Respondents see the State Health Department as generally courteous, knowledgeable, but also overbearing, inflexible, slow, inefficient, and inconsistent. Thirty-one respondents were asked questions about both health departments' attitudes, procedures and enforcement and gave frank answers during personal interviews.

SURVEY BACKGROUND

The Missoula Subdivision Survey was conducted as part of the Community Health Services Evaluation and Planning Project, which is testing evaluation methodologies in Missoula County, and will ultimately provide evaluation tools to local and the State Health Departments. The survey, part of the Subdivision Review Evaluation Plan, was conducted to determine how other agencies and firms who deal with the health departments on subdivision business view the departments' procedures, communications, attitudes, enforcement and staffs. This survey is the first effort in Montana to gather direct feedback on subdivision review from users.

Environmental health directors generally agreed that they wanted information about how people see their health department and suggested the following types of questions:

- health departments' enforcement and environmental protection.
- perceived attitudes of the health departments toward the respondents.
- how respondents view the certificate of survey and subdivision review process.
- how each health department compares with other agencies.
- clarity of review requirements and regulations.
- unresolved problems with the health departments.
- suggestions for improvements.

The Missoula Health Department's subdivision program is staffed by one engineer and five registered sanitarians. The Department currently reviews approximately 16 certificates of survey and 2 subdivision submittals per month and deals with approximately 50 firms, individuals and agencies per year. Current census estimates show Missoula County has a population of 72,000. The County covers 2,624 square miles. The Study was conducted in Missoula County because the Community Health Services Evaluation and Planning Project is contracted with the Missoula Health Department.

STUDY DESIGN

The study was conducted by one researcher who interviewed a sample of firms, individuals and agencies who deal with the Missoula Health Department and the State Health Department (Subdivision Bureau) on subdivision submittals. Because getting frank and open responses was imperative to the success of the survey, personal interviews at respondents' offices were chosen as the survey methodology.

The respondent list, carefully chosen to rule out interviewing only people known to be friendly to the two health departments, included:

- 7 developers
- 4 geologists
- 3 lawyers
- 7 engineers
- 3 realtors
- 3 surveyors
- 4 representatives of local
— government agencies

31 = n

Interviews took about 20 minutes each and were conducted from September 15 to October 8, 1980.

One week before the interviews were to start, a letter (see page 3.3) was mailed to each potential respondent, announcing the study, explaining who was conducting the survey and asking for a 20-minute personal interview. Telephone calls set up the meetings.

Of the original list of 35 potential respondents, 31 were interviewed. Two respondents were not interviewed because their firm preferred they be represented by the third staff member on the list, and two respondents were not locatable.

Because the survey covered such a wide range of professions, wording questions was very difficult. The main purpose of the questionnaire was to get the respondents thinking of specific areas of the subdivision process and since consistency was not a problem (using one interviewer), the questionnaire was an "open" one. *(Caution: This question format worked because (1) a trained and experienced interviewer conducted each interview, thereby insuring consistency in asking and recording; (2) the interviewer routinely questioned respondent hesitancy, getting more complete and frank responses; and (3) the open-ended*

Questions (#4, 9, 10, 12, 13, 14) were carefully tabulated to insure consistency and accuracy. Under normal field conditions, this methodology may not work so well. To insure success, efforts to duplicate the study should use one trained interviewer, or results could be severely biased.)

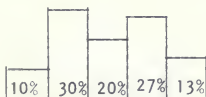
A common concern of all respondents was that their answers be confidential. This issue was made more sensitive by the fact that these people must be able to maintain good working relationships with the health department. Confidentiality was a priority in the study, somewhat eclipsing results. To insure responses were truly confidential, no identification was used on any of the survey forms (results, then, could not be analyzed by profession), and any responses that were traceable to one person were not released. Only aggregate data is available for data analysis.

RESULTS

When asked if they felt the Missoula Health Department's main interest was protecting the environment or if the department was more concerned with rules and regulations, respondents generally felt the health department fell somewhere inbetween. Results show a fairly even distribution of responses.

Question #1

department
more concerned
with environment



department
more concerned
with rules and
regulations

Respondents generally felt that the Missoula Health Department's attitude toward their firm was:

- neither over-bearing nor lax (92%)
- very friendly (90%)

When asked about information they had received from the Health Department, 59% felt the information was complete and 68% felt the information was clear. Approximately 1/3 of the respondents saw the Missoula Health Department as uncompromising.

Interestingly, when asked the same question about the State Health Department, respondents saw the State as — very overbearing, inflexible, less friendly and more liable to give complete information (although that information is seen as slightly less clear than information from the local health department).

Question #2

Health Department seen as:

| | Msia H.D. | State H.D. |
|-----------------------------|--------------|---------------|
| neither overbearing nor lax | 92% | 35% |
| flexible | 69% | 45% |
| friendly | 90% | 63% |
| giving complete information | 59% | 67% |
| giving clear information | 68% | 61% |

Question #3 asked about respondents' perceptions about their treatment by the health departments, and generally, respondents thought they had been treated fairly, very courteously, professionally, and consistently by the Missoula Health Department. Almost half said they were not dealt with promptly and about 40% did not feel they had been treated knowledgeably.

Respondents felt they were treated less fairly, less courteously, less professionally and less consistently by the State. They felt their treatment was a good deal less prompt and efficient by the State than the local health department, but said they felt the State was more knowledgeable.

| Question #3 Health Departments treat me: | Msla | State |
|--|------|-------|
| | H.D. | H.D. |
| fairly..... | 83% | 62% |
| courteously..... | 100% | 86% |
| promptly..... | 53% | 14% |
| efficiently..... | 70% | 27% |
| professionally..... | 83% | 67% |
| knowledgeably..... | 57% | 76% |
| consistently..... | 77% | 48% |

Respondents see the benefits from the Missoula City-County Health Department reviewing certificates of survey instead of the State as: (1) timeliness, (2) knowledge of local area and conditions, (3) efficiency (less duplication of services), and (4) a better review.

Many respondents foresaw no negative aspects, but those who had comments were concerned with the uniformity of c.o.s. review across the State, the need for an appeal process (if the local health department were to take on c.o.s. review). (Questions #4)

Compared to other reviewing agencies, the local health department is seen as easy to deal with, contrasted with responses which show the State Health Department as difficult to deal with. (Question #5)

Respondents overwhelmingly (79%) felt the existing subdivision requirements are effective in protecting the ground water (Question #6). They feel the Missoula Health Department effectively enforces existing subdivision regulations (93%) (Question #7). Compared to five years ago, respondents thought the Missoula Health Department had improved its general subdivision review process (62%) or stayed the same (28%). Ten percent thought the Health Department had gotten worse in its general subdivision review process. (Question #8)

About 50% of the respondents felt that there was nothing unclear or confusing about the c.o.s. or subdivision review process. Those who felt the process was unclear/confusing generally mentioned exemptions (rights of way, occasional sales, gifts to family members, etc.), changes in interpretation of rules

(and "statute not well-written"), and differences in different counties' enforcement and interpretation. (Question #9)

More respondents (69%) felt that there weren't too many changes in subdivision regulations from one time to another. Of those who said there were, many did agree that the changes were necessary, although some mentioned insufficient public notice, inconsistent interpretation and others mentioned circumvention of the laws. (Question #10)

The local health department is seen as relatively easy to deal with during the subdivision review process and the State Health Department is seen as among the worst to deal with. (Question #11)

One-half of the respondents said at one time or another, they'd had problems with the local health department that were not resolved to their satisfaction. Problems generally centered around (1) health department being too arbitrary or rigid, (2) time delays that increased costs to the respondents (or their clients), (3) differences in interpretation of statutes, and (4) problems with septic tank/drainfield construction or location.

One-half of the respondents admitted unresolved differences with the State Health Department. Their problems centered around (1) incomplete reviews (where the submittal was "returned at the end of the legal limit for one or two errors and then the corrected submittal was returned again later for one or two new errors."), (2) unwillingness to work with submitter, and (3) not understanding that time delays and regulations by the health department were costly to the respondent. (Question #12)

Respondents overwhelmingly felt the Missoula staff members were good to work with. The few negative comments centered around respondents feeling that in some situations, Missoula Health Department personnel were inflexible and unwilling to work out problems. (Question #13)

General suggestions and comments centered around seven categories:

- "Both health departments need to do more public relations and get out more information to both the public and subdivision professionals, perhaps through use of a newsletter, informational seminars, guides for going through the steps of a submittal, and notification of changes in the laws or interpretation."
- "More inter-agency cooperation, to ease the hassles with following a submittal through channels."
- "Correcting situations where a submittal is returned for one or two errors, correction is made and then the State finds more errors on the corrected submittal — usually at the end of the legally allotted time period."
- "Be more consistent, i.e., enforcing regulations and dealing with individuals."
- "Shorten length of time needed for submittals and be more aware of economic costs of hold-ups."

- "Return phone calls quicker from Missoula Health Department."
- "Be more flexible and willing to work out differences, and to help submittor with problems."
(Question #14)

In general, respondents felt good about the local health department's personnel, procedures and attitudes, but were markedly less positive about the State Health Department. *(It should be noted that the State Health Department is more of a regulatory body than the local health departments, and respondents are also more able to walk into the local health departments and work out problems. It is more difficult to travel to Helena to do the same, although many respondents said that they had gone to Helena at one time or another to meet and try to establish a working relationship with the State personnel.)*

Respondents were uniformly pleased that someone came into their office and asked them for their opinions. Several mentioned their approval of the survey and about one-quarter asked for a results report. (An abbreviated version of this report will be mailed to each respondent in response to this request.) Inevitably, a study like this generates a good deal of good will and positive public relations for the agency. Respondents like the idea that the departments care enough to send someone in to talk to them and get their opinions.

Respondents' wishes for confidentiality were carefully honored. Only responses supported by other similar answers are included in the tabulations and in this report. Responses did fall neatly into patterns and were easily cross-correlated, showing strong internal validity of the study.

CONCLUSIONS

The Missoula Subdivision Survey was a solid success. A good deal of data has been presented, much of which is positive, but much indicating changes could be made for the better. Areas for particular attention for the Missoula Health Department are:

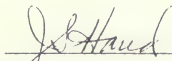
- conduct more public relations and information; interact more with subdivision professionals; and show more understanding of their problems, both economic and time.
- improve the management of submittals (time and error reports).
- be seen as more flexible and willing to work out problems with the submittor, and provide more clear, complete information.

According to the survey, the State Health Department's weak areas are:

- speed and efficiency of submittal routing and actions, and improvement of repeated submittal returns near the end of the legal limitations.

- improve image by being perceived as more flexible and less overbearing.

The survey accomplished its purpose of showing how people view the local and State health departments, as well as creating much good will toward agencies who care enough to ask for direct feedback on their actions and operations. I enjoyed my part in presenting this information to you.



Janice S. Hand
Research Specialist
Community Health Services
Evaluation and Planning Project
Missoula City-County Health Dept.
October 1980





SECTION 4

TO MEASURE PROGRAM EFFICIENCY AND ACCURACY — AN ACTION LOG

Results - Errors or omissions on subdivision submittals were most generally made by the submitter (consultant) (91%), discovered by the local health department (70%), and were the fault of the consultant (42%). (See page 4.4 for report.) These results were compiled by reviewing Missoula's Action Logs and a sample of submittal folders.

Discussion - The results showed that the Missoula Health Department was indeed meeting its goal of taking first action on submittals within 10 days. The low percentages of local health department error are also positive program feedback, while the high percentage of consultant error (91%) indicates some education is needed. Special training and discussion of problems was held with sanitarians as a result of the evaluation.

The Missoula Health Department chose to conduct a three month sampling. Sanitarians carefully completed the Action Log for three months instead of throughout the year, which gave a good approximation of actual time spent on submittals. Average sanitation, engineering, and clerical time is then extrapolated to the whole year by multiplying average staff time by the number of submittals.

The other (more accurate) method is to complete Action Logs on each submittal and use actual, rather than estimated information.

Methodology - The Action Log is designed to be attached to the left inside cover of a submittal file folder. All personnel time and mileage used for the submittal should be recorded in at least 15 minute (1/4 hour) increments. You may want to analyze the data on a quarterly, semi-annual, or annual basis.

This evaluation calls for analyzing the logs for three pieces of data: (1) compliance with internal department objectives of reviewing each submittal within x days (10 days is Missoula's objective); (2) errors and omissions and by whom, and (3) average per actual personnel time per activity per submittal (for cost analysis - see Section 2). The analysis is probably best done by a program administrator or supervising sanitarian.

Action Log

Project ID _____

[illegible]

Total Sanitarian Time/Cost _____

Total Clerical Time/Cost _____

Total Mileage _____

TIME SHEET

[illegible]

MISSOULA CITY-COUNTY HEALTH DEPARTMENT

TIME SHEET

Project COS HD # 2281

| Date | Name | Task | Hours | Rate | Cost |
|---------|------------|-------------------------------------|-------|------|------|
| 9-3-80 | MTC. (SEC) | Bag in distribution | .25 | | |
| 9-5-80 | J.B. (San) | Preliminary Review for completeness | .15 | | |
| 9-8-80 | T.B. San | Site inspection | .20 | | |
| 9-15-80 | T.B. San | Letter of denial - + water sample | .20 | | |
| 9-23-80 | T.B. San | Resample well | .20 | | |
| 10-2-80 | T.B. | write lifting of Rest. | .15 | | |
| 10-3-80 | M.T. Sec | Type document | .25 | | |
| 10-4-80 | J.B. San | Rev & sign | .10 | | |
| 10-4-80 | M.T. Sec | Mail - file local copy | .15 | | |



MISSOULA CITY-COUNTY HEALTH DEPARTMENT

301 West Alder • Missoula, Montana 59801 • Ph. (406) 721-5700



December 23, 1981

TO: Joe Aldegarie
Environmental Health Director

FROM: Janice S. Hand *[Signature]*
Research Specialist

RE: Subdivision Review Program Evaluation Report

Here is an analysis of errors or omissions made on subdivision submittals and average time to first action. This information is part of the Subdivision Review Program Evaluation. Cliff Foy, Senior Sanitarian, reviewed a sample of submittal folders in October and provided the information. I analyzed his results.

Errors or Omissions

| | | |
|----------|--------------------|-------------|
| Made by: | Consultant | 91% |
| | Local Health Dept. | 3% |
| | Neither | 6% |
| | | <u>100%</u> |

| | | |
|-----------|--------------------|-------------|
| Found by: | Local Health Dept. | 70% |
| | State Health Dept. | 27% |
| | Local and State | 3% |
| | | <u>100%</u> |

| | | |
|-----------|--------------------|-------------|
| Fault of: | Consultant | 42% |
| | Local Health Dept. | 14% |
| | State Health Dept. | 0 |
| | None | 34% |
| | Local and State | 10% |
| | | <u>100%</u> |

A sample of 52 records were reviewed; 30 had some sort of error or omission, ranging from further information needed to sloppy submittal.

Time to First Action

The average time to action is 8 days, while the mode (or most frequently mentioned) is 10 days and the median (middle) is 7 days. These statistics show that your goal of first action within 10 days is generally being met. Twenty percent of records were not reviewed within the 10 day limit. Thirty-three percent showed first action in 5 days or less. (49 records were reviewed.)

JSH/j revised
cc: Cliff Foy

4.5

SUBDIVISION REVIEW MODEL

Evaluation Plan

The first subdivision law for Montana was enacted by the legislature in 1895. The statute not only required plats and surveys to be recorded, but also spelled out the requirements for plats, surveys, certificates of survey, certificates of dedication and abstracts of title.

Although Montana subdivision laws have changed many times since the original in 1895, the prime concern of government still centers on the public health aspects of water quality and potability, sewage treatment and disposal, and solid waste management. In 1973, the legislature enacted HB 465 which served to change previous subdivision history --

... no map or plat may be filed, no building may be erected or occupied, and no lot may be sold until the local health officer has approved water availability and quality and sanitary facilities and the state department has indicated the subdivision is not subject to sanitary restriction.¹

Local health departments currently have the authority to review certificates of survey and minor subdivisions for conformance to laws and State Health Department regulations and for granting local approval to major subdivisions.

Recognizing the benefits of evaluating both process and effectiveness of the subdivision review program, a State-Local Evaluation Committee was formed in 1977. The Committee, comprised of members from local health departments as well as the State Health Department, established a Subdivision Subcommittee whose goal was "to recommend to the Evaluation Committee a workable means to evaluate subdivision programs that are conducted by the state and local health departments."

The work started by the Committee was formalized by the approval of a two year research and evaluation grant project between the Montana Department of Health and Environmental Sciences and the Missoula City-County Health Department, contractor for the project. The Missoula Health Department, responsible for

¹Montana Legislative Council, "Montana Subdivision Laws: Problems and Prospects," November 1978, p. 9.

developing evaluation models for eight public health programs, will develop and test evaluation models in Missoula, revise them as necessary and then distribute "user guides" to local and state health departments for use in their evaluations. The Subdivision Evaluation Model will be designed so that health departments may take all or parts of it for use in evaluation and quality assurance of their programs.

Literature Search

A literature search revealed no available works on evaluation of subdivision review programs. Because of that unsuccessful search and because the process of review is largely a matter of specific regulations and laws, input from those working in that field was particularly valuable:

- Ed Casne, Bureau Chief, Subdivision Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana
- Joe Aldegarte, Director of Environmental Health, David Feffer, Health Officer, Missoula City-County Health Department, Missoula, Montana
- Tom Cowan, Environmental Health, Bruce McIntyre, Health Officer, Flathead City-County Health Department, Kalispell, Montana
- Jim Neely, Environmental Health Director, George Sheckleton, Health Officer, Yellowstone Health Department, Billings, Montana
- Will Selser, Environmental Health Director, Bob Johnson, Health Officer, Lewis and Clark Health Department, Helena, Montana
- Pete Frazier, Environmental Health Director, Don Pizzini, Health Officer, Cascade City-County Health Department, Great Falls, Montana
- Emery Nelson, Sanitation Division, Edward King, Health Officer, Gallatin City-County Health Department, Bozeman, Montana
- Bill Burke, Butte-Silver Bow Health Department, Butte, Montana
- Dave Thomas, Resource Development Specialist, Health Planning and Resource Development Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana

Method of Procedure

Because of concern with both outcome (sewer failures), and process (time limits for processing subdivision review, etc.), evaluation objectives for each have been established. Objectives are designed to provide specific measures of the program's effectiveness and efficiency so that meeting

each objective becomes a measure of the program's success in meeting its over-riding goal -- Protect water quality and insure effective sewage treatment and disposal so that the public is adequately protected against health hazards.

Each objective and its evaluation procedure can be easily modified to fit individual health department data needs. For example, the time in Objective Four can be changed to realistically reflect staffing and workload. Each evaluation description will follow the same format: (1) rationale for the objective will be discussed, (2) methodology will be detailed and explained, and (3) use of data by administrators will be suggested.

Objectives*

1. TO RECEIVE BACK FROM THE STATE HEALTH DEPARTMENT NO MORE THAN *5%* OF SUBMITTED CERTIFICATES OF SUBDIVISION PLAN APPROVAL FOR BEING IN ERROR OR INCOMPLETE.
2. TO INSURE THAT THE NUMBER OF DWELLING UNITS EXPERIENCING SEWER FAILURES DOES NOT EXCEED *5%* PER YEAR OF THE TOTAL NUMBER OF DWELLING UNITS APPROVED.
3. TO MAINTAIN ACCURATE RECORDS OF ALL SUBDIVISION AND CERTIFICATE OF SURVEY SUBMITTALS AND ACTION TAKEN.
4. TO TAKE NO MORE THAN *10* WORKING DAYS BEFORE FIRST ACTION IS TAKEN ON CERTIFICATES OF SURVEY AT THE LOCAL LEVEL AND *10* WORKING DAYS AT THE STATE LEVEL.
5. TO DETERMINE ENGINEERING FIRMS', LAND DEVELOPERS', AND OTHER AGENCIES' PERCEPTIONS OF THE HEALTH DEPARTMENT'S EFFECTIVENESS AND COMMUNICATIONS.
6. TO ACCURATELY TRACK COSTS OF CONDUCTING THE CERTIFICATE OF SURVEY AND MINOR SUBDIVISION PROGRAM.

Objective 1 To receive back from the State Health Department no more than *5%* of submitted certificates of subdivision plan approval for being in error or incomplete.

Rationale - Extra staff and transit time is inevitable when an erroneous certificate must be returned to the originating health department from the State. A measurable objective will insure that problems are traced and

*
Percentages and numbers of days in italics may be changed for each department.

will provide data from which improvements may be made as necessary.

Methodology - Use of a simple time log attached to the front of each certificate's file folder will provide data quickly and simply. The log will list each action taken on the file, by whom, date of action, (mileage), and cost (see also Objectives Three, Four and Six).

[illegible]

Each staff member who deals with the certificate will be responsible for noting the date, their initials, what action they took and how much time was spent per activity (in 15 minute intervals or other time increments as desired).

Use of Data - Each quarter (or as needed), a report can be made so that administrators can track the number of certificates of subdivision plan approval returned for being in error or incomplete. Should significant numbers or an amount greater than 5% be returned, then administrators have the necessary information to correct the problems by holding staff inservice training, providing written guidelines, etc.

Objective 2 To insure that the number of dwelling units experiencing sewer failures does not exceed 5% per year of the total number of dwelling units approved.

Rationale - Since the reason for doing subdivision review is to insure adequate sewage treatment, a firm measure of effectiveness has been deemed essential by program managers. Although there is no standard for the length of time a sewer system "should" last, failures are generally evident to trained sanitarians, whether they are from inadequate maintenance, poor design or faulty installation.

Methodology - A form currently distributed by the State Health Department, Subdivision Bureau, is designed to track all failures per county. For purposes of this evaluation, the State form will be simplified to enable sanitarians to

fill it out quickly and easily. (See Appendix A for existing form.) When completed, one copy should be retained by the local health department and one copy should be made and sent to the Subdivision Bureau.

The concept of "dwelling unit" will be used in order to differentiate between possible consequences of a failure of a system serving one family and the failure of a system serving 30 families. For purposes of this evaluation, "dwelling unit" will mean individual housing for a family or people living together (i.e., each will include at least a kitchen, bathroom and living area).

Because the average sewage system is designed to last approximately 20 years, common causes of failure will be listed for the reviewing sanitarian who must also use professional judgement for those he/she determines have failed before they should have.

Use of Data - Given data on causes of sewer failure, it will become a good deal easier for sanitarians to be alert for common problems such as failures located in a common area, installers who have an inordinately high rate of sewer system failures before the 20-25 year expected life, etc. Additionally, as a measure of sanitarian effectiveness, the data will be able to track the type of problems that appear and give an indication of avoidable problems.

Objective 3 To maintain accurate record of all subdivision and certificate of survey submittals and action taken.

Rationale - As a process measurement of public health's efficiency, good records are important to track time from initiation to approval, action taken and problems discovered. Data from a tracking system not only is useful as a count of "how many" and "what happened?," but also as a measure of time limitations.

Methodology - The time log mentioned in Objective One will also serve to accurately track subdivision and certificate of survey submittals as well as the processes that occur between submittal and approval.

One sanitarian should be assigned the responsibility of reviewing the time logs to insure that they are being filled out completely. Spot checks should be made throughout the year to insure that records are being kept completely and accurately by both State and local personnel.

Use of Data - Since time logs are easily completed and attached to file

folders, the process should be easy to comply with. Complete records will provide answers to questions about "what was done?" and "when did action x occur?" as well as compliance with legal time constraints (see Objective Four).

Objective 4 To take no more than 10 working days before first action is taken on certificates of survey at the local level and 10 working days at the State level.

Rationale - This objective was established as a measure of efficiency for the certificate of survey program. The number of days should be considered variable and should depend on the individual department's workload and staffing. Because legal requirements call for action to be taken on certificates of survey within 50 days, local health departments must act at least within that limit and the State must act at least within 10 days.

Methodology - Through use of the record form discussed in Objectives One and Three, a simple measure of number of days can be made and tallied for inclusion in monthly, quarterly or yearly reports by the sanitarian in charge. If actions take longer than the objective states, then careful records should be kept in order to determine whether actions are individual special cases or, indeed, if the problems are consistent and require action. (Action = Approval or Disapproval.)

Use of Data - As a check of whether or not the 10 day objective is being met, this system will yield data that is quickly gathered and analyzed. If the data shows the objective to be unmet, then administrators can determine why (workload too heavy? staff untrained? etc.) and make appropriate changes.

Objective 5 To determine engineering firms', land developers', and other agencies' perceptions of the health department's effectiveness and communications.

Rationale - Public health has never tried to measure its impact on those companies and groups it works with. This survey would break that barrier by personal, confidential interviews with engineering firms, land developers and other agencies who deal with the health department on subdivisions, sewer permits and certificates of survey.

Methodology - The survey will be designed to gather data on:

- perceptions of health department's efficiency and effectiveness
- clarity of health department instructions

- satisfaction with working relationship with health department
- suggestions for improvement of health department's relationships

A 15-20 minute personal interview to be conducted by research staff for Missoula can also be conducted by trained secretarial staffs of other departments. The interview will be with a sample of land developers as well as each engineering firm and agency (Planning Board, Surveyor's Office, etc.) the health department deals with. The survey must be strictly confidential and individual replies will not be released in order to insure frank responses.

Time sheets will be kept and the cost of conducting the survey will be included in the results report.

Use of Data - Any problems and communication gaps revealed by the survey can be corrected, with the chance of improving working relationships and the health department's image. (Interestingly, a side-effect often seen in the aftermath of surveys is an increase in department image because "Someone from the health department was here and wanted to know what I thought!")

Objective 6 To accurately track costs of conducting the certificate of survey and minor subdivision program.

Rationale - As with most other parts of the Community Health Services Evaluation Project, evaluation cost data is listed by administrators as a prime priority. Because many agencies are caught between legal and professional obligations and money and staff limitations of conducting the myriad of public health programs today, it has become more and more imperative to have accurate cost information.

Methodology - Minor subdivision and certificate of survey time data will be kept by sanitarians and State personnel in the time log (as mentioned in Objectives One, Three and Four). The log has space for computing costs per each action by the personnel involved. Costs per each certificate of survey and minor subdivision can be tabulated individually or total costs can be compiled as needed. A cost worksheet will be included.

Because it is difficult to separate subdivision activities from the daily duties of a sanitarian who may do licensed food establishment inspections, sewer inspections, water analysis and subdivision review as well as investigate

garbage complaints and junk vehicle problems all in one day, a percentage figure will be used to estimate mileage.

$$\left(\frac{\text{subdivision salaries}}{\text{total salaries}} \right) \times \text{total mileage (env. hlth.)} = \text{estimated subdivision mileage}$$

A space for mileage will be included on the Time Log for a cross-check of the percentage method above.

Use of Data - Cost data is required by administrators as a means of determining the allocation of resources and budgeting as well as a program planning tool.

Implication of Subdivision Review Model

As stated earlier, the Subdivision Review Model can be generalized to fit other health departments' needs. The methodologies noted for each objective are clearly laid out and administrators can choose the level of data they require, whether it be general or specific.

Measurements are given for meeting each of the six objectives. These, too, may be tailored to fit a particular department's needs. Missoula's final evaluation data will be made available to any administrator who would like to use it.

It is important for most of the evaluation to be continued from year to year (or quarterly, etc.) as a time series so that trends and baselines may be established and then measured over time. As staff become familiar with the procedures, this will become a quick and easy process.

Publication of the methodology and results of this evaluation model should be considered. Judging from an unsuccessful literature search, little has been accomplished in the evaluation of subdivision review programs nation-wide. This project is a first and publishing its results would surely contribute to the state-of-the-art.

J.S. Hand
March 1980
MCCHD, Missoula

SUBDIVISION REVIEW EVALUATION SUMMARY

| Instrument | To Measure . . . | Procedure | Obj. |
|--|--|---|------|
| Time Log | Number of submitted certificates of subdivision plan approval for being in error or incomplete. | To be attached to each plan's file folder and notation made at each action by sanitarian. | 1 |
| Sewage Treatment System Failure Survey | Number of sewer system failures from FY 1975 to current and reason for failure. | Form to be filled out each time a sewer failure is noted. | 2 |
| Time Log | If accurate record of all subdivision and cos submittals is kept routinely. | To be attached to each plan and submittal's file folder and notation made at each action. | 3 |
| Time Log | If number of working days before first action taken on cos exceeds 10 working days. | " | 4 |
| Survey | Health Department's communications and effectiveness as seen by other agencies and companies that work with the health department. | Personal interview with each agency and company who deals with the dept. on subdivision. | 5 |
| Time Log (Cost Section) | Cost of administering and conducting the cos and minor subdivision programs. | Cost section of time log plus percent of total mileage plus overhead. | 6 |

SEWAGE TREATMENT SYSTEM FAILURE SURVEY

Name of Owner _____ Date _____

Location _____ County _____

Date Installed _____ Section, Township, Range _____

Name of Installer _____

Type of System (Please specify size of tank, amount of drainfield, etc. and include a drawing if possible)

Septic tank drainfield _____

Evapotranspiration _____

Seepage Pit _____

Other _____

Soil Description (Please provide a general description of soils in the drainfield area. If information is available, please describe to a depth of 6 feet, including any impervious layers.)

Has this area ever been flooded or inundated? Yes _____ No _____

If so, when? _____

What is the minimum depth to groundwater at the drainfield site? _____

Depth of drainfield below ground level _____

System located in: Fill material _____ Native material _____

Reason for Failure

1) High water table _____ 4) Under design _____ 6) Other _____

2) Impervious soils _____ 5) Construction _____

3) Steep slopes _____

Type of Waste Discharged Into SystemDomestic (household) _____ Other (please describe) _____

_____Description of Failure

_____Other Comments

Form Completed by: _____

USERS' GUIDE

FOR

LICENSED FOOD ESTABLISHMENT
PROGRAM EVALUATION

June 1981

By the Missoula City-County Health
Department (J. S. Hand) under Contract
#100325-01 with the Montana State
Department of Health and Environmental
Sciences.

USERS' GUIDE

Licensed Food Establishment Program Evaluation

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INTRODUCTION

Explanation of Evaluation Project - This Users' Guide demonstrates four ways to evaluate your Licensed Food Establishment Program — from a computer program which stores and analyzes inspection data to a cost analysis of the program. The evaluation is a result of the two-year Community Health Services Evaluation and Planning Project, conducted from 1979 to 1981 by the Missoula City-County Health Department.

The evaluation project's goal is to provide practical, efficient evaluation methods that public health administrators can use when evaluating their own programs.

Scope of Licensed Food Establishment Program Evaluation - Because restaurant inspections take more staff time than inspections of groceries, meat markets, bakeries, bottlers, hotels, motels, and trailer courts, this evaluation is designed for foodservice inspections only. Evaluation procedures shown in this Guide can be easily expanded, following the same procedures shown for foodservice evaluation.

Each evaluation methodology is designed to smoothly fit into your health department's existing program and to produce clear and immediately usable data. Because the Missoula Health Department was the test site for this evaluation model, the examples shown in this Guide are based on Missoula's program and data. You may need to modify some parts of the evaluation to fit your program's features or expand the evaluation to other inspection programs.

Each section of the Guide shows Missoula's results, discusses evaluation procedures, reviews evaluation models and provides forms used to collect data. The Cost Analysis Worksheets and protocol are copy-ready.

Changes from Original Evaluation Plan - An evaluation plan is simply a brief outline of proposed work. When parts of the original Licensed Food Establishment Evaluation Plan proved infeasible, they were revised.

1. Objective 3, Sanitarian To Keep Inspection Form Until 4- and 5-Point Violations Are Corrected — Changed. This procedure is generally efficient, but the Missoula Health Department enters the information into the SPIF computer system and uses SPIF reports to track correction of 4- and 5-point items.
2. Objective 4, Sanitation Standards — Changed. The Licensed Food Establishment Inspection protocol, Section 2, covers both standards and enforcement procedures.
3. Objective 5, Food-borne Illness Incidence — Completed and found to be infeasible as a separate effort from the Communicable Disease Reporting

System. A survey of Missoula physicians and emergency room physicians shows that most doctors believe food-borne illness is uncommon in Missoula. Most respondents said they saw three or fewer cases per month. Although we recognize that a good outcome measure of the Licensed Food Establishment program would be to track food-borne illness, there are several important reasons why that measure is impractical. First, a good Communicable Disease Reporting System will insure that food-borne illnesses are reported to the health department. Second, a good many cases of food-borne illness are never reported to either physician or health department, so tracking true incidence is very difficult. Third, many times food-borne illness is diagnosed as gastrointestinal and true incidence is hard to know.

SECTION 1

THE SPIF COMPUTER PROGRAM — A PROCESS AND OUTCOME MEASURE

Results - The Missoula Health Department is now using the SPIF (Sanitation Program Information Formulator) computer program for filing and analyzing its foodservice inspection data. The SPIF system is providing information to measure standardization between sanitarians, to compare individual sanitarians' scoring with county averages, to show sanitarian workloads, and to analyze inspection data by violation, by establishment, by type of establishment and by sanitarian. SPIF Report 2B has replaced use of the continuous record, which was kept manually. (See complete list of reports on page 1.3).

SPIF reports show that Missoula's average establishment score is 90, well over the level of 80 that is to trigger enforcement action (See Protocol, pages 5.1 - 5.24). Analysis of SPIF reports also point out that results of 129 follow-up inspections were not documented.

Another process evaluation is standardization of sanitarians. SPIF reports show that Missoula sanitarians are well standardized. There are no significant differences from one sanitarian to another, and reports demonstrate that the last standardization in August, 1980 significantly decreased sanitarian scoring differences.

Discussion - The SPIF computer program was developed by a Washington, DC consulting firm, Opportunity Systems Incorporated, in response to the FDA's need for a system to catalogue and analyze the vast amount of data generated by foodservice inspections. The Missoula application was the smallest in the nation to date — all other SPIF installations are at state-wide levels.

Largely because we had to change the SPIF Program from an IBM to a Burroughs computer system, it took nine months to get the system up and operational. Missoula's start-up personnel costs were estimated at \$6,000. The total yearly budget to run SPIF will be approximately \$1,000 (based on one hour per week environmental health aide, line charges for the terminal, plus department overhead).

Methodology - Each establishment must have two forms filled out and entered into the computer — a Food Service Establishment Profile Form and an Inspection Form. The Profile Form (page 1.4) enters an establishment's name, address, type of service, meal volume, water supply, sewage, and other identifying information. Information from the Food Service Establishment Inspection Report, the required 44-item inspection (page 1.5), can then be entered after each inspection, complaint or follow-up.

Reports can be called up for any time period, whether reports are needed weekly or yearly. Time parameters, such as asking for reports based on FY 1981 only, or on several years, can be varied according to need.

Missoula's SPIF system is available to other health departments on an actual-cost basis. Other departments will be able to send their Profile and Inspection Forms to Missoula, who will then enter the data, run requested reports, and mail the completed information back to the department.

SPIF

Tables Produced by Report Generator

Report Generator Produces Table

| | |
|---|------------|
| 1 | 1,13 |
| 2 | 2A,2B |
| 3 | 3,4 |
| 4 | 5,6 |
| 5 | 7,11,12,14 |
| 6 | 8 |
| 7 | 9 |
| 8 | 10,15,16 |
| 9 | 17 |

Table 1 - Establishment Profile listing.

Table 2 - Report on previous inspection results for each establishment.

2A - Includes all five types of inspections, with written descriptions of violations.

2B - Includes only regular inspections.

Table 3 - Historical data for each establishment.

Table 4 - Historical violations and inspection data for each establishment.

Table 5 - Violation statistics and the ratio of violations for each sanitarian.

Table 6 - Violation statistics and the deviation from state/county ratios for each sanitarian.

Table 7 - Scoring levels and workload (in terms of inspection types) for each sanitarian.

Table 8 - Establishment violation statistics (showing pattern of violations by category of structural, operational and critical items).

Table 9 - Inspections by type of establishment by type of inspection.

Table 10 - Violation statistics by most points lost for each violation.

Table 11 - Scoring levels and workload (in terms of inspection type) for each county.

Table 12 - Scoring and inspection distributions by weekly meal volume.

Table 13 - Summary counts of establishments in each county by type of service by number of meals served weekly.

Table 14 - Scoring levels and inspection frequencies by type of service.

Table 15 - Violation statistics by type of violation.

Table 16 - Violation statistics by category of violation.

Table 17 - Inspection frequency and scoring levels by type of establishment.

Other Reports Produced When Files are Updated: Profile Form Action Report
Profile Form Error Report
Inspection Form Action Report
Inspection Form Error Report
Roster of Establishments to be Inspected in 30 Days

SH/6/81/jsh

Food Service Establishment Profile Form

| Establishment I.D. | County | Dist. | Est. No. | Action | | | Sanit. Code | | Census Tract |
|--------------------|--------|-------|----------|---------------|-----------------|------------------|-------------|--|--------------|
| (1-10) | | | | Add .. 11-1 | Delete 3 | Deactivate ... 5 | | | |
| | | | | Change 2 | Activate 4 | | (12-14) | | (15-17) |

[illegible]

| | | | | | | | | |
|----|-----------------------------------|--|--|--|--|--|--|--|
| 2. | Street Address (42-65) | | | | | | | |
|----|-----------------------------------|--|--|--|--|--|--|--|

80-47

| | |
|----|--------------|
| 3. | City [15-36] |
|----|--------------|

| | | | |
|----|-----------------------|--|--|
| 4. | State Code [37-38] | | |
|----|-----------------------|--|--|

| | | | | | | |
|----|---------------------|--|--|--|--|--|
| 5. | Zip Code [39-43] | | | | | |
|----|---------------------|--|--|--|--|--|

| | | | | | | |
|----|----------------------------|--|--|--|--|--|
| 6. | Activation Date [44-38] | | | | | |
|----|----------------------------|--|--|--|--|--|

| | | | | |
|----|----------------------------------|--|--|--|
| 7. | Type of Establishment [50-52] | | | |
|----|----------------------------------|--|--|--|

| 8. | Type of Service | |
|----|-------------------------|------|
| a. | Sit-down | 53-1 |
| b. | Cafeteria/Bufferet | 2 |
| c. | Carryout (fast service) | 3 |
| d. | Caterer (comm.) | 4 |
| e. | Interstate Conveyance | 5 |

| 9. | Weekly Meal Volume | |
|----|--------------------|------|
| a. | Less than 500 | 54-1 |
| b. | 501-1,000 | 2 |
| c. | 1,001-4,000 | 3 |
| d. | 4,001-8,000 | 4 |
| e. | More than 8,000 | 5 |

| | | |
|-----|--------------|------|
| 10. | Water Supply | |
| | a. Public | 85-1 |
| | b. Private | 2 |
| | c. Other | 3 |

| | |
|-------------------|------|
| 11. Sewage | |
| a. Public | 55-1 |
| b. Private | 2 |
| c. Other | 3 |

| | | |
|-----|--------------------|------|
| 12. | Permitted/Licensed | |
| a. | Yes | 57-1 |
| b. | No | 2 |

| | |
|------------------------------|------|
| 13. Certified Manager | |
| a. Yes | 58-1 |
| b. No | 2 |

| | | | |
|-----|--------------------------------|--|--|
| 14. | Inspection Interval [59-61] | | |
|-----|--------------------------------|--|--|

[illegible]

80 - (2)

| Est. I.D. 11-10 | County | Dist. | Est. No. | Census Tract 11-13 | Sanit. Code 14-16 | Yr. 17-22 | Mo. 23-25 | Day 26-28 | Travel Time | Inspection Time |
|--------------------|--------|-------|----------|-----------------------|----------------------|--------------|--------------|--------------|-------------|-----------------|
| | | | | | | | | | | |

Owner Name: _____ Establishment Name: _____ Zip: _____
 Address: _____

PURPOSE

Regular 28-1
 Follow-up 3
 Complaint 3
 Investigation 4
 Other 4

Food Service Establishment Inspection Report

Sinking Signs

Yes No

Based on an inspection this day, the items circled below identify the violations in operations or facilities which must be corrected by the next routine inspection or such shorter period of time as may be specified in writing by the regulatory authority. Failure to comply with any time limits for corrections specified in this notice may result in cessation of your Food Service operations.

ITEM

WT COL

| FOOD | 16.10.204 | | |
|---|-----------|---|----|
| 01 Source: sound condition, no spoilage | | 5 | 30 |
| 02 Original container: properly labeled | | 1 | 31 |

| FOOD PROTECTION | 16.10.205-9 | | |
|---|-------------|---|----|
| 03 Potentially hazardous food meets temperature requirements during storage, preparation, display, service transportation | | 5 | 32 |
| 04 Facilities to maintain product temperature | | 4 | 33 |
| 05 Thermometers provided and conspicuous | | 1 | 34 |
| 06 Potentially hazardous food properly thawed | | 2 | 35 |
| 07 Unwrapped and potentially hazardous food not re-served | | 4 | 36 |
| 08 Food protection during storage, preparation, display, service, transportation | | 2 | 37 |
| 09 Handling of food (ice) minimized | | 2 | 38 |
| 10 In-use food (ice) dispensing utensils properly stored | | 1 | 39 |

| PERSONNEL | 16.10.210-11 | | |
|--|--------------|---|----|
| 11 Personnel with infections restricted | | 2 | 40 |
| 12 Hands washed and clean, good hygienic practices | | 5 | 41 |
| 13 Clean clothes, hair restraints | | 1 | 42 |

| FOOD EQUIPMENT & UTENSILS | 16.10.212-16 | | |
|---|--------------|---|----|
| 14 Food (ice) contact surfaces: designed, constructed, maintained, installed, located | | 2 | 43 |
| 15 Non-food contact surfaces: designed, constructed, maintained, installed, located | | 1 | 44 |
| 16 Dishwashing facilities: designed, constructed, maintained, installed, located, operated | | 2 | 45 |
| 17 Accurate thermometers, chemical test kits provided, gauge (cock 1/4" IPS valve) | | 1 | 46 |
| 18 Pre-flushed, scraped, soaked | | 1 | 47 |
| 19 Wash, rinse water: clean, proper temperature | | 2 | 48 |
| 20 Sanitization: water: clean, temperature, concentration, exposure time, equipment, utensils sanitized | | 1 | 49 |
| 21 Wiping cloths: clean, use restricted | | 1 | 50 |
| 22 Food-contact surfaces of equipment and utensils clean, free of abrasives, detergents | | 1 | 51 |
| 23 Non-food contact surfaces of equipment and utensils clean | | 1 | 52 |
| 24 Storage, handling of clean equipment/utensils | | 1 | 53 |
| 25 Single-service articles, storage, dispensing | | 1 | 54 |
| 26 No re-use of single service articles | | 1 | 55 |

| WATER | 16.10.217 | | |
|--|-----------|---|----|
| 27 Water source, safe, hot & cold under pressure | | 1 | 56 |

FOLLOW-UP

Yes 74-1
 No 2

RATING SCORE 75-77

100 less weight of items violated

STATE LIC.

*Critical Items Requiring Immediate Attention

| SEWAGE | 16.10.218 | | |
|------------------------------------|-----------|---|----|
| 28 Sewage and waste water disposal | | 4 | 57 |

| PLUMBING | 16.10.219 | | |
|---|-----------|---|----|
| 29 Installed, maintained | | 1 | 58 |
| 30 Cross-connection, back siphonage, backflow | | 5 | 59 |

| TOILET & HANDWASHING FACILITIES | 16.10.220-1 | | |
|---|-------------|---|----|
| 31 Number, convenient, accessible, designed, installed | | 4 | 60 |
| 32 Toilet rooms enclosed, self-closing doors, fixtures, good repair, clean, hand cleanser, sanitary towels/hand-drying devices provided, proper waste receptacles | | 2 | 61 |

| GARBAGE & REFUSE DISPOSAL | 16.10.222 | | |
|---|-----------|---|----|
| 33 Containers or receptacles, covered, adequate number, insect/rodent proof, frequency, clean | | 2 | 62 |
| 34 Outside storage area enclosures properly constructed, clean, controlled incineration | | 1 | 63 |

| INSECT, RODENT, ANIMAL CONTROL | 16.10.223-4 | | |
|---|-------------|---|----|
| 35 Presence of insects/rodents — outer openings protected, no birds, turtles, other animals | | 4 | 64 |

| FLOORS, WALLS & CEILINGS | 16.10.225-27 | | |
|--|--------------|---|----|
| 36 Floors, constructed, drained, clean, good repair, covering installation, dustless cleaning methods | | 1 | 65 |
| 37 Walls, ceiling, attached equipment: constructed, good repair, clean, surface, dustless cleaning methods | | 1 | 66 |

| LIGHTING | 16.10.228 | | |
|---|-----------|---|----|
| 38 Lighting provided as required, fixtures shielded | | 1 | 67 |

| VENTILATION | 16.10.229 | | |
|---|-----------|---|----|
| 39 Rooms and equipment — vented as required | | 1 | 68 |

| DRESSING ROOMS | 16.10.230 | | |
|---|-----------|---|----|
| 40 Rooms clean, lockers provided, facilities clean, located | | 1 | 69 |

| OTHER OPERATIONS | 16.10.231-32 | | |
|---|--------------|---|----|
| 41 Toxic items properly stored, labeled, used | | 5 | 70 |
| 42 Premises maintained free of litter, unnecessary articles, cleaning/maintenance equipment properly stored, authorized personnel | | 1 | 71 |
| 43 Complete separation from living/sleeping quarters. Laundry | | 1 | 72 |
| 44 Clean, solid linen properly stored | | 1 | 73 |

Received by: name _____ entered _____
 title _____ SPIF
 Inspected by: name _____
 title _____

CONTINUED ON REVERSE YES NO



SECTION 2

INSPECTION PROTOCOL — FOR CONSISTENT, EFFECTIVE INSPECTIONS

Results - Before the Licensed Food Establishment Inspection Protocol was developed, Missoula did not have a formal inspection and enforcement procedure. Staff sanitarians thoroughly reviewed the protocol in a training session and are currently following the protocol.

Discussion - Protocols are one clear way to insure program quality and consistency. The Licensed Food Establishment protocol also helps to avoid a major complaint of the foodservice industry — inconsistency in the inspection program. The protocol also helps insure standardization of enforcement procedures.

Methodology - The Inspection Protocol was written with input from program administrators, local sanitarians, State Food and Consumer Safety personnel, and the local county attorney. Protocols should be reviewed and updated at least yearly to be sure they remain up-to-date and complete.

LICENSED FOOD ESTABLISHMENT PROGRAM

Inspection Protocol

Purpose of Inspection - To insure safe and healthy food supplies, kitchen facilities and surroundings for all licensed food establishments in the county.

Protocol - This protocol is divided into four categories to reflect common inspection situations. The protocol is written to allow for inspectors' professional judgment, although the protocol should be recognized as a tool to insure consistent, fair, efficient and effective treatment of licensed food establishments. The protocol stresses mutual agreement between the Licensed Food Establishment management and the inspecting sanitarian because, when time limits are set by both, management is more likely to feel responsible for the decision and to cooperate fully.

- I. LICENSED FOOD ESTABLISHMENT MANAGER AVAILABLE DURING INSPECTION - DEFICIENCIES LIMITED (*i.e.*, inspection score 80 or greater and 2 or fewer critical 4- or 5-point items*)
 1. Sanitarian will write a short explanation of each violation on the inspection form to clarify problems. Sanitarian will discuss limited deficiencies with manager by reviewing inspection form.
 - A. If mutual agreement can be reached about time limits for correction, sanitarian lists limits on inspection form and manager agrees by signing the form. A letter is not necessary.
 - B. If mutual agreement can not be reached, then the sanitarian will write a letter to the licensed food establishment (LFE) manager (within two working days after inspection) listing deficiencies and time limits for correction and re-inspection date. Letter by first class mail to LFE manager.
 2. Followup should be conducted on all critical 4- and 5-point items at the end of the agreed time limits.
 - A. If critical deficiencies have been corrected, then sanitarian will note on followup inspection report and file.
 - B. If critical deficiencies have not been corrected, then the sanitarian will send a first class letter to the LFE manager, listing the specific critical deficiencies and time limits for correction of the violations.

*Items #1,3,4,7,11,12,20,27,28,30,31,35,41, unless, in professional judgment of sanitarian, followup is of no value (*i.e.*, smoking in kitchen violation in item 12). Mark "no followup" clearly on inspection form.

- 1) If critical deficiencies are corrected, the sanitarian will note on followup inspection report and file.
- 2) If critical deficiencies are not corrected, then the sanitarian will send a certified letter to the LFE manager, saying that the specific critical deficiencies are to be corrected within five calendar days or enforcement procedures will begin. (If the certified letter is refused by the LFE manager, the sanitarian will hand-deliver the letter with one witness and will detail the action for the LFE file.)
 - a) If critical deficiencies are then corrected, the sanitarian will note on followup inspection report and file.
 - b) If all critical deficiencies are still not corrected, then the sanitarian will proceed to enforcement procedures.

II. LICENSED FOOD ESTABLISHMENT MANAGER AVAILABLE DURING INSPECTION - DEFICIENCIES EXTENSIVE (*i.e.*, inspection score less than 80 or more than 2 critical 4- or 5-point items)

1. Sanitarian will write a short explanation of each violation on the inspection form to clarify problems. Sanitarian will discuss extensive deficiencies with manager by reviewing inspection form and coming to a mutual agreement about time limits acceptable to both parties for correction of deficiencies. Inspection form, clearly marked "Letter to Follow," is signed by manager. Before leaving the establishment, the sanitarian should stress the seriousness of the inspection findings. Within two working days of inspection, the sanitarian will send, via first class mail, a letter to the LFE manager, carefully defining deficiencies, restating correction time limits and again stressing the seriousness of the violations.
 - A. If mutual agreement is reached, then the sanitarian will conduct followup on agreed date.
 - B. If mutual agreement of time limitations and violation corrections can not be reached, then the sanitarian will send a certified letter to the LFE manager defining the deficiencies and stating a time limit for correction of the items.
 - C. Followup will be conducted on all critical 4- and 5-point items at the end of the time limits.
 - 1) If the deficiencies have been corrected, then the sanitarian will note on followup inspection form and file.
 - 2) If deficiencies have not been corrected, then the sanitarian will send a certified letter to the LFE manager stating that corrections will be complete five days after receipt of letter or enforcement proceedings will begin. (If the certified letter is refused by the LFE manager, the sanitarian shall hand-deliver the letter with one witness and will detail that action for the LFE file.)

Enforcement Options:

1. If health hazards are significant, but do not pose an immediate threat to the public, a letter will be sent to the LFE manager telling him/her that the Health Department must advise the local Board of Health of the situation and its potential for future health hazards at the next regular meeting of the Board. If the items are corrected, the agenda item for the Board of Health becomes moot and will be canceled.
2. The Health Department may refuse to validate LFE licenses for the new year. See Appendix I, V. Sloulin memo: "Validation of Department Licenses by Local Health Authorities."
3. If agreement on correction of critical 4- and 5-point items cannot be reached, the County Attorney will send the LFE manager a standard letter within two working days by first class mail (Appendix B) notifying him/her of enforcement procedures available and asking manager to contact the inspecting sanitarian immediately.
 - A. If the manager does contact the sanitarian and agrees to make corrections, then the sanitarian will follow protocol set for III,2.
 - B. If the manager does not contact the inspecting sanitarian within five days after receipt of letter, the Health Department will proceed to further enforcement action.
4. If the establishment is in the City limits and the LFE manager and inspecting sanitarian cannot reach an agreement on correction of critical 4- and 5-point items, the sanitarian will write a letter outlining corrective measures and time guidelines, with a copy of that letter to go to the City Attorney. If items are not corrected within 10 days of receipt of certified letter, a request will be made to the City Council to revoke the business license of that LFE.
 - A. If all items are corrected within 10 days, then the sanitarian will notify the City Council and City Attorney, in writing, that there is no need for further action.
 - B. If all items are not corrected within 10 days, a letter will be written to the City Attorney requesting City Council action on the matter. Adequate documentation and possibly photographs should be prepared for the Council's weekly meeting. The inspecting sanitarian and Environmental Health Director should meet with the City Attorney to prepare the case material.
5. If critical items create or could imminently create a health hazard to the public, the Health Officer and Board of Health can order the abatement of nuisances by court injunction, by contacting the County Attorney to get an injunction from District Court to close the establishment.

6. The Health Department may request license revocation by the State Department of Health and Environmental Sciences. The State will need the following to begin revocation.
 - A. Complete file on the establishment with at least two inspections showing that the LFE manager will not comply with requests.
 - B. Supportive data - photographs, copies of all correspondence, etc.
 - 1) The State Health Department may, after providing opportunity for hearing, revoke a license for serious or repeated violations of any of the requirements of this rule or for interference with the State Department of Health or other authorized persons in the performance of duty.
 - 2) Prior to revocation, the State Health Department will notify, in writing, the holder of the license or the person in charge, of specific reason(s) for which the license is to be revoked and that the license will be revoked at the end of 10 days following service of such notice unless a written request for hearing is filed within the 10-day period, the revocation of the license becomes final.
 - 3) Submission to the State Health Department of an acceptable plan of correction within 10 days after receipt from the Department of written notice of violation and execution of an acceptable plan within the time prescribed in the written notice of approval of the plan by the Department will be a bar to cancellation of the license for the violation.

11/81 revised slp



July 13, 1979

TO: All Sanitarians

FROM: Vern Sloulin, R.S., Chief *es*
Food & Consumer Safety Bureau

SUBJECT: Validation of Department licenses by local health authorities.

The 1979 legislature amended Title 50, Chapters 50 through 52 to include the authority and administrative procedures for the validation of department licenses by local health officers or sanitarians. A copy of Amended Title 50, Chapter 50, covering food purveyors, is attached. Chapters 51, Public Accommodations, and 52, Trailer Courts, read the same.

The following is provided for your information and guidance in applying the law.

SCOPE:

The amendments concern only the issue of licenses. They do not change the procedures for revocation or cancellation of licenses which have been issued. Revocation and cancellation remain a function of the Department of Health and Environmental Sciences.

LICENSE VALIDATION:

- (a) Licenses will be validated in the local jurisdiction where the establishment is located and not the address of the licensee, if the two are different.
- (b) Licenses for itinerant food service establishments will be validated in the jurisdiction first contacted by the itinerant operator.
- (c) Where no health officer or sanitarian are available, licenses will be validated by the Chief, Food and Consumer Safety Bureau, and mailed directly to the licensee.
- (d) The local health officer may authorize the local sanitarian to validate licenses issued under Chapters 50-52. Such authorization should be noted in the minutes of the Board of Health, and a letter indicating the assignment of authority sent to the Food and Consumer Safety Bureau.
- (e) Unless otherwise directed, licenses will be mailed to the local sanitarian who is then responsible for having them properly validated and delivered to the licensee.

<date>

<name>

<address>

Dear <salutation>:

Missoula City-County Health Department officials have informed this office that you are operating a licensed food service at <business address>, in violation of several state sanitary regulations contained in Section 16-2.14(2)-SI4215 A.R.M. I am told that you have not corrected those violations despite the repeated requests from Health Department personnel. Under Montana law, Section 50-50-107, M.C.A., the County Attorney has a duty to prosecute violations of the laws and regulations governing licensed food services establishments.

This is to advise you that if you do not contact the Health Department and correct these violations or reach a mutual agreement with the Health Department to correct them within five (5) days of the date of this letter, our office will initiate one or more of the following procedures:

- (a) Obtain an injunction ordering your business to be closed until the violations are corrected;
- (b) Request the State Department of Health and Environmental Sciences to cancel and revoke your food service establishment license;
- (c) Prosecute the violation as a misdemeanor and seek criminal fines.

These enforcement actions are authorized by Section 50-50-106, 50-50-108, and 50-50-209, M.C.A.

Please contact <health department> of the Missoula City-County Health Department immediately. <he/she> may be reached at 721-5700, ext. 364.

Sincerely,

ROBERT L. DESCHAMPS III
Missoula County Attorney

By _____
Robert Slomski
Deputy County Attorney

RS/ckm

(f) Mailing the printed licenses to the local health agency will constitute the department's notification of its intent to issue those licenses.

The procedure of contacting local sanitarians before processing new or changed applications will continue.

(g) The fifteen day issue period is calculated from the day the printed license is received by the local health agency.

(h) The written notice from the health officer to the applicant indicating a refusal to validate the license must be specific. The grounds for the action must be listed together with the sections of law or rule in violation.

(i) The notice should explain to the applicant the option of a hearing before the local board of health, and explain the procedure for requesting the hearing.

(j) The notice should either be hand-delivered to the applicant or sent certified return-receipt mail.

GENERAL:

Sanitarians are advised to keep their health officers and boards of health informed of all licenses subject to validation refusal. If for no other reason, they will be deeply involved in any hearing protesting the action.

The department recommends pre-denial consultation between local health officials and the department to better assure consistency and uniformity of action. We must avoid the charge of arbitrary and capricious action and jurisdiction to jurisdiction variation.

The Department of Health and Environmental Sciences also has the authority to refuse to issue a license under the authority of 50-50-204 and 50-50-211.

Since both the local health agency and the department have the authority to deny the issue of a license, and since the grounds for action by both agencies is generally documented and presented by the local sanitarian, the decision to proceed through local refusal to validate or department denial of application rests with the local agency.

Refusing to validate a license is a potent enforcement tool. Local agencies must use it wisely and guard against the situation which finds them tolerating significant violations for an extended period of time in order to reach the validation period. Also, care is necessary to prevent the situation which finds the validation of a license by the local authority followed closely by a request to the department to cancel or revoke the license. This is only acceptable if sanitary conditions change significantly between the time of validation and the request for revocation action.

(3) Only one license is required for a person owning and operating one or more vending machines.

(4) Before a license may be issued by the department it must be validated by the local health officer, or if there is no local health officer the sanitarian, in the county where the establishment is located.

50-50-202. Publicly owned establishment exempt from license requirement.

Establishments owned or operated by the state or a political subdivision of the state are exempt from licensure but must comply with the requirements of this chapter and rules adopted by the department under this chapter.

50-50-203. Application for license.

An application for a license is made to the department on forms and contains information required by the department.

50-50-204. Right to license.

Licenses shall be granted as a matter of right unless grounds for denial or cancellation exist.

50-50-205. License fee.

For each license issued, the department shall collect a fee of \$20. It shall deposit receipts in the state general fund.

50-50-206. License not transferable.

Licenses are not transferable or applicable to any premises other than that for which the license was issued.

50-50-207. Expiration date of license.

Licenses expire on December 31 following the date of issue unless canceled for cause.

50-50-208. Local board to report number of licensees to department.

Before June 1 of each year, the local board of health shall submit to the department a list of the establishments in each jurisdiction that are licensed under this chapter.

50-50-209. Cancellation of license.

The department may cancel a license if it finds, after proper investigation, that the licensee has violated this chapter or a rule effective under this chapter and the licensee has failed or refused to remedy or correct the violation.

50-50-210. Submission of plan of correction as bar to cancellation.

Submission to the department of an acceptable plan of correction within 10 days after receipt from the department of written notice of violation and execution of an acceptable plan within the time prescribed in the written notice of approval of the plan by the department shall be a bar to prosecution for violation.

50-50-211. Notice and hearing required.

A license may not be denied or canceled by the department without delivery to the applicant or licensee of a written statement of the grounds for cancellation or denial or the charge involved and an opportunity to answer at a hearing before the department to show cause, if any, why the license should not be denied or canceled. In such case, the licensee must make a written request to the department for a hearing within 10 days after notice of the grounds or charges has been received.

50-50-212. Cancellation of license for multiple-type establishment.

When a multiple-type establishment is licensed by the department, the denial or cancellation of the license may affect the entire establishment or only a portion of it as determined by the department. A multiple-type establishment includes an establishment authorized by 50-50-201(2).

50-50-213. Return of license for alteration or destruction.

On cancellation of a license or the right to operate one or more of the multiple-type establishments under the same license, the license certificate shall be returned to the department for destruction or deletion of types of establishment as the department may direct in its notice of cancellation.

****** 50-50-214. Notification of and validation by local health officer.

(1) A license issued by the department under Title 50, chapters 50 through 52 is not valid until signed by the local health officer in the county where the establishment is located.

(2) The local health officer shall, within 15 days after the department has notified the local health officer of its decision to issue a license under Title 50, chapters 50 through 52, make a final decision on whether the license will be validated.

(3) Failure of the local health officer to validate the license within 15 days after its receipt is a refusal.

50-50-210. Refusal by local health officer -- appeal to board.

- (1) The local health officer may only refuse to validate a license issued under Title 50, chapters 50 through 52, upon a finding that the requirements of these chapters and any rules implementing them are not satisfied. If the local health officer refuses to validate the license, he shall notify the applicant and the department in writing stating his reasons.
- (2) The applicant or any person aggrieved by the decision of the local health officer not to validate a license may appeal the decision to the local board of health within 30 days after receiving written notice of the local health officer's decision.
- (3) The hearing under the local board of health shall be held pursuant to the contested case provisions of the Montana Administrative procedure Act.

Part 3

Inspections

50-50-301. Health officers to investigate and make inspections.

State and local health officers, sanitarians, or other authorized persons shall investigate and inspections of establishments and make reports to the department as required by rules adopted by the department.

50-50-302. Health officers to have free access.

State and local health officers, sanitarians, and other authorized persons shall have free access to establishments at all reasonable hours.

50-50-303. Licensee to furnish food samples.

Persons licensed under part 2 shall furnish food samples for analysis as required by rules adopted by the department.

50-50-304. Discovery of food capable of causing food-borne illness.

If a state or local health officer, sanitarian, or other authorized person finds food that is capable of causing food-borne illness, he shall issue a report in writing recommending that the food be withheld from sale to the public. A duplicate copy of the report, properly authenticated, is admissible in evidence in any action or proceeding where the condition of the food at the time of the inspection is material.

50-50-305. Department to pay local board for inspections.

(1) Before June 30 of each year, the department shall pay to a local board of health, as established under 50-2-104, 50-2-106, or 50-2-107, an amount from any general fund appropriation to the department which is for the purpose of inspecting establishments licensed under this chapter; provided, however, that there is a functioning local board of health and that the local board of health, local health officers, and sanitarians assist in the enforcement of the provisions of this chapter and the rules adopted under it.

(2) The funds received by the local board of health shall be deposited with the appropriate local fiscal authority and shall be in addition to the funds appropriated under 50-2-108 through 50-2-114.

Part 4

Frozen Food Lockers

50-50-401. Tagging or declaration requirements for stored meat.

(1) The owner or operator of an establishment, as defined in this chapter, shall not receive the carcass of a game animal, game bird, or any quarter, half, or whole carcass of beef or veal unless:

(a) It is properly stamped or tagged; or



SECTION 3

COST OF THE LICENSED FOOD ESTABLISHMENT PROGRAM

Results - The Foodservice (restaurants and bars) Inspection program cost the Missoula Health Department \$19,411 in FY 1981. The cost includes \$11,344 in personnel costs, \$4,464 in mileage costs, and \$3,403 in health department overhead. The average cost of the program per establishment is \$73.

Discussion - Cost information is easy to collect. Personnel time can come from department time sheets or from actual inspection time recorded by sanitarians on the inspection form. The more accurate the inputs (time, mileage, etc.), the more accurate the cost analysis.

Methodology - See detailed methodology printed on the back of the program cost analysis.

for FY _____
 _____ actual
 _____ estimated

OVERHEAD

Health Department Cost Analysis

The purpose of this cost worksheet is to provide a "formula" to be used to determine the overhead, or "cost of doing business," on a percentage basis so that overhead costs can be fairly allocated to each particular health department program.

1. Administrative Salaries

- a. Health Officer _____
- b. Administrative Assistant _____
- c. Administrative Secretary _____
- d. H.D. Receptionist _____
- e. H.D. Accountant _____
- f. Vital Statistics Clerk _____
- g. Medical Consultant _____
- h. Other: _____

x _____ (fringe)

_____ admin. salaries
 (a)

2. Other Administrative Personnel Expenses

- a. Termination Reserve _____
- b. Recruitment _____
- c. General Conferences & Meetings _____
- d. General Training _____
- e. General Books & Periodicals _____
- f. Administrative Travel _____
- g. Other: _____

_____ other personnel
 (b) expenses

3. Other Administrative Expenses

- a. All Office Supplies _____
- b. All Copies and Printing _____
- c. All Postage _____
- d. Office Equipment & Maintenance _____
- e. All Telephone Charges _____
- f. Interest on Warrants _____

_____ admin. expenses
(c)

4. Building and Maintenance

- a. Rent OR \$ _____ per sq. foot
x number of sq. feet of office,
lab, etc. _____
- b. Maintenance _____
- c. Utilities _____
- d. Insurance _____
- e. Other: _____

_____ building and
maintenance
(d)

5. Other Overhead Expenses

Other: _____

_____ other expenses
(e)

TOTAL OVERHEAD COSTS =

$$\text{Overhead Computation} = \frac{a + b + c + d + e}{\text{total H.D. salaries + fringe}} = \text{OVERHEAD (30\%)}$$

OVERHEAD

Health Department Cost Analysis

Overhead is a factor designed to calculate the total costs of administering a program. It should be noted that overhead is an estimation of the health department's administration of all department programs, all of which overlap; hence, the need for an overhead figure.

Total Administrative Salaries

This means salaries plus appropriate yearly fringe benefits and merit raises of only personnel involved in the general administration of the health department. (Other personnel may be added if other departments are organized differently. For example, a health department personnel director or assistant health officer should be added to this category.) The receptionist is the person who acts for the entire health department, the general office clerk (or a portion of her/his salary) acts as vital statistics clerk.

To calculate (a), or total administrative salaries, multiply total salaries (which should include yearly raises) by yearly fringe percentage.

Other Administrative Personnel Expenses

"Termination Reserve" means those monies set aside to pay vacation and sick pay severance to employees who quit. "Recruitment" means costs budgeted for newspaper ads, printing and other costs of filling vacant positions. "Conferences and Meetings" refers to those of general interest to health administration and not applicable to a specific program. "Training" means general management or administrative training, not that attributable to a specific program. The "Books and Periodicals" category includes general health planning, public health, and management materials of general interest and not attributable to a specific program. "Travel" means general health department trips and excludes travel for specific programs or conference travel (to be included under "Conferences and Meetings"). Blanks are provided for other categories specific to the general administration of a health department. Add all these categories to get Total Administrative Personnel Expenses (b).

Other Administrative Expenses

Expenses in this category are those which are general to the running of an agency. Since it is virtually impossible to split out the number of pencils, pieces of paper and the like used by one program or activity, it is a good deal easier to include these as a total category and be able to easily allocate them in the department overhead computation. (The only exception to this would be grants where administrative expenses are each listed and funded separately and should be allocated as such.) Office supplies, copies and printing, postage, office equipment and phone are total costs per year for the whole department excepting grant allocations. Interest on warrants is interest paid on monies borrowed from a bank to cover current department operating expenses (if applicable). Other administrative expenses should be included in this category if they are attributable to the general operation of a department. (Note: It is more accurate and easier to charge vehicle expenses to the program which uses them on a cents-per-mile basis. It is also a good deal more difficult to charge phone, office space and the like out on a program-by-program basis.)

Building and Maintenance

Housing costs are to be included in the overhead computation because of the difficulty of allocating square footages, utilities, phones, etc., to each program or activity. This category should cover all housing expenses of the department and laboratory.

Other Expenses

This category should include costs of routine audits, administrative consultants, depreciation on capital, or other similar items.

LICENSED FOOD ESTABLISHMENT PROGRAM

Cost Analysis

This cost analysis provides a formula to determine the costs to the Health Department of conducting the Licensed Food Establishment Program.

1. PERSONNEL

a. Sanitarian time x (salary + fringe) _____

b. Clerical time x (salary + fringe) _____

c. Other: _____

2. ENVIRONMENTAL HEALTH ADMINISTRATIVE COSTS

a. Environmental Health Director _____

b. Supervising Sanitarian _____

c. Other: _____

3. HEALTH DEPARTMENT OVERHEAD

___% of total personnel costs

_____ total personnel
costs

4. MILEAGE @ ___¢/mile _____

5. TRAINING, BOOKS AND PERIODICALS _____

6. OTHER: _____

Total Program Costs

PROCEDURE

Licensed Food Establishment Program Cost Analysis

Note: Each health department has its own system of tracking personnel and mileage costs. This cost analysis, designed to provide the most convenient method of determining program costs, can be changed to reflect the department's specific situation.

1. PERSONNEL - There are several ways to calculate personnel time: (1) from department or division time sheets, (2) from inspection time taken from the inspection form, or (3) from estimates derived from a time study. Personnel time should include time spent on the telephone as well as on less obvious activities. Use hourly salary figures (or an average, if more than one sanitarian is involved) and add the appropriate fringe benefit percentage.
2. ENVIRONMENTAL HEALTH ADMINISTRATIVE COSTS - This category shows direct administrative costs which are the costs of directing and supervising the program. These costs can be calculated as a percentage of total program personnel costs if better data is not available (10% is a good rule-of-thumb).
3. HEALTH DEPARTMENT OVERHEAD - This category provides a way to include building, maintenance, and general health department administration (health officer, accountant, and other administrative support) in program costs. See Overhead Cost Analysis to determine health department overhead percentages.
4. MILEAGE - If accurate records are not available, mileage can be calculated as a proportion of total environmental health time, or:
 1.
$$\frac{\text{total lic. food estab. program hours}}{\text{total env. hlth. hours}} = X\%$$
 2.
$$X\% \text{ times Total Yearly Mileage} = \text{Lic. Food Estab. Proportional Mileage}$$
5. TRAINING, BOOKS AND PERIODICALS - These should be only costs specific to the Licensed Food Establishment Inspection Program. Costs which are general should be allocated to Department overhead (see Overhead Cost Analysis).
6. OTHER - Any other costs not already included in the above five categories. This could include terminal, line and computer charges for the SPIF Program.

FOODSERVICE ONLY
LICENSED FOOD ESTABLISHMENT PROGRAM

Cost Analysis
includes Mineral Co.

This cost analysis provides a formula to determine the costs to the Health Department of conducting the Licensed Food Establishment Program.

1. PERSONNEL

- a. Sanitarian time x (salary + fringe) \$ 5214
 SPIF. one @ 35 min / insp. 8.45 am. San salary
 + 15 min travel + 1.35 Fringe at 16%
 50 min. ea. 9.80
 (83 hr) (9.80) (641 insp.) =
 b. Clerical time x (salary + fringe) 622
 (95 hrs. by time sheets) (5.65 + .90 fr.)
- c. Other: 11693
 E.H. Aide for entering SPIF, file insp., etc.
 (284 hrs. by time sheets) (5.14 + .82 fr.)

2. ENVIRONMENTAL HEALTH ADMINISTRATIVE COSTS

- a. Environmental Health Director 3253
 (215 hrs. from time sheets) (13.04 + 2.09 fr.)
- b. Supervising Sanitarian 562
 EST. AT 1 hr/wk. = 52 hrs.
 (52 hr) (9.31 + 1.49)
- c. Other: —

\$ 11,344 total personnel costs

3. HEALTH DEPARTMENT OVERHEAD

30% of total personnel costs (11,344) 3403

4. MILEAGE @ 20¢/mile

(62,000 mi. budgeted for E.H.) (36% L.F.E. ESTIMATED) = (22,320 mi.) 20 4464

5. TRAINING, BOOKS AND PERIODICALS

\$200 san. conferences - meals, MILEAGE, etc. 200

6. OTHER: (SPIF terminal pdt by Research FY 81 ONLY)

\$ 19,411

Total Program Costs

or \$72.70 / ea. of
267 ESTAB.

John 6/81





SECTION 4

ESTABLISHING A RISK SCORE

Results - The purpose of developing a risk score is to have an uncomplicated, yet effective way to predict the public's risk of eating at an establishment. With that information, we want to be able to know when to allocate personnel and resources to establishments having highest risks.

The Missoula Risk Model is based on information readily available from the Food Service Establishment Profile Form (See Section 1).

Testing the formula showed that, in general, 24-hour full-service establishments pose about two times the risk as a pizza establishment, and bars with food pose slightly more risk than fast-food establishments.

We will continue to test the risk formula in FY 1982 to see if it could be computerized and also made more sensitive, while maintaining its simplicity.

Discussion - There has been long-standing interest in an accurate risk formula to be used in allocating program resources, but there are significant problems with such a formula. The main problem is how complicated a complete model could become. In addition, extremely accurate, subjective inputs are too costly in terms of sanitarian and statistical time needed to gather and compute the information.

Along with constraints that information for the formula be easy to collect and the formula itself be easy to calculate, is the danger that the formula could become useless. While common sense and experience could say that full-service restaurants pose twice the risk as a fast-food establishment, the formula does give an objective and qualitative analysis.

Methodology - The formula currently being tested uses information from the SPIF Profile Record.

$$\text{Risk Score} = \frac{(a)(b)(c)(d)}{2(\text{average last 3 inspections})}$$

a = Type of Establishment

| | |
|-----------------|------|
| restaurant - | 10.0 |
| bar and food - | 9.0 |
| bar with food - | 5.0 |
| pushcart - | 7.5 |

b = Type of Service

| | |
|----------------|------|
| full service - | 10.0 |
| buffet - | 9.0 |
| caterer - | 8.0 |
| fast food - | 7.5 |

| | | |
|--------------------------|---|------|
| c = Meal Volume Per Week | | |
| < 500 | - | 4.0 |
| 501-1000 | - | 5.5 |
| 1001-2000 | - | 7.0 |
| 2001-4000 | - | 8.5 |
| > 4000 | - | 10.0 |

| | | |
|-------------------|---|------|
| d = Hours Per Day | | |
| 24-hours | - | 10.0 |
| 23-18 hours | - | 8.0 |
| < 18 | - | 6.0 |

See page 4.3 for examples of the testing.

TEST OF

Licensed Food Establishment Risk Formula

risk formula = $\frac{(\text{type est.}) (\text{type service}) (\text{meal vol.}) (\text{hours})}{2 (\text{ave. last 3 inspections})}$

24 Hour, Full-Service Restaurants

A. $\frac{10 \times 10 \times 10 \times 10}{2(86)} = 58.14$

B. $\frac{10 \times 10 \times 10 \times 10}{2(88.7)} = 56.37$

C. $\frac{10 \times 10 \times 8.5 \times 10}{2(87.7)} = 48.46$

Large, Full-Service Restaurants

A. $\frac{10 \times 10 \times 8.5 \times 8}{2(83)} = 40.96$

B. $\frac{10 \times 10 \times 8.5 \times 10}{2(81.3)} = 52.27$

Pizza-Type Restaurants

A. $\frac{10 \times 10 \times 8.5 \times 6}{2(94.3)} = 27.04$

B. $\frac{10 \times 10 \times 7 \times 6}{2(92)} = 22.83$

Fast-Food Restaurants

A. $\frac{10 \times 7.5 \times 8.5 \times 6}{2(90)} = 21.25$

Bar With Food

A. $\frac{9 \times 7.5 \times 8.5 \times 8}{2(94)} = 24.41$



SECTION 5

LICENSED FOOD ESTABLISHMENT PROGRAM

Evaluation Plan

Of all types of business in the U.S., the food and beverage service industry has been ranked fourth in size. Estimates show that Americans spend \$145 billion per year for food and drink consumed both in and out of the home and eat an average of 150 million meals daily in food establishments.³¹ Further approximations show that 27% of America's food dollar is spent on food prepared outside of the home,²⁸ an amount increasing yearly.

Socioeconomic changes have resulted in the increasing popularity of eating out — people are more prone to eat lunch out because of distances from their work place to their home; the food and beverage industry has heavily promoted the sociable effects of eating out; the fast pace of modern life more and more often includes eating out; and food variety has changed so that patrons may choose from a large and varied selection of food.

Public demand on the food service industry means that:

More persons will be eating meals away from home. Hence, more persons than ever will be at risk in the event that mishandling of food results in an outbreak of foodborne illness. Second, the greater demands of consumers on existing facilities may result in temporary lapses in proper food handling techniques.¹²

Nationally, the objectives of the Licensed Food Establishment Program are to:

1. prevent foodborne illness
2. protect food from contamination
3. insure the soundness of food
4. meet consumer expectations.

Montana's goals are no different. Since the beginning of its Licensed Food Establishment Program in the early 1920's, the State Department of Health and Environmental Sciences and local health departments have conducted programs to inspect establishments, educate managers and food-service employees, consult and advise on food service problems and investigate suspected cases of foodborne illness.

The State and local health departments, interested in evaluating their Licensed Food Establishment Programs, began the process as a joint State-local Evaluation Committee. Their needs for quantitative and qualitative data to use in program planning and allocation of resources were formalized with the approval of a two year research evaluation grant between the State Department of Health and Environmental Sciences and the Missoula City-County Health Department, contractor for the project. The Missoula Health Department is responsible for developing evaluation models for eight public health programs, and testing, revising and distributing "user guides" to State and local health departments for their use in self-evaluation.

Literature Review

A comprehensive literature search was conducted to review current evaluation of licensed food establishments and to explore different ideas in the field. A good deal of relevant information is available about restaurant inspection frequencies, risking formulas and foodborne illness, some of which is reviewed below (for complete bibliography, see page 23):

Zaki, M., Miller, G., et.al.
"A Progressive Approach to the
Problem of Foodborne Infections"³⁵

Food samples from 39 retail stores were analyzed for bacterial contaminants to explore the feasibility of using microbiological standards in enforcement. A total of 450 retail food establishments were inspected once and then again six months later with 62% and 67% acceptable ratings respectively. The authors feel the scoring system is of limited value for determining re-inspection or frequency of inspection.

Bader, M., Blonder, E., et.al.
"A Study of Food Service Establishment Sanitation Inspection Frequency"²

This study showed that in food service establishments which had consistently maintained satisfactory sanitation, reducing their inspection frequency from four times per year to once a year resulted in some decline in sanitation levels.

Kaplan, O.B., El-Ahraf, A.
"Relative Risk Ratios of Foodborne Illness in Foodservice Establishments: An Aid in Deployment of Environmental Health Manpower."¹⁹

Noting that there was no available literature providing reliable risks of foodborne illness, the authors devised a ratio to determine relative risks. The implication is that there is no basis for the traditional belief that all establishments must be inspected a given number of times per year.

Deniston, O. and Welch, W.
"Evaluation of Performance of
a Food Sanitation Program."¹⁰

Bryan, F.
"Impact of Foodborne Diseases
and Methods of Evaluating Control
Programs."⁴

Levy, B. and McIntire, W.
"The Economic Impact of a
Food-Borne Salmonellosis
Outbreak."²⁰

Using a standard of foodservice violations
and correction rates, this study suggests
that in a district which was not inspected
for a period of time, the ratings would
decline in the absence of a program.

Author believes that licensed food establish-
ment program managers cannot rely on a
change in the incidence of foodborne disease
outbreaks to determine the effectiveness
of prevention activities. Further, changing
programs to concentrate on factors directly
causing foodborne illness will demonstrate
a change as a result of program activity.

A salmonellosis outbreak which affected 125
people was analyzed and the economic impact
of the outbreak was estimated at \$28,733.
Authors judged that the costs of preventive
programs were much less than the economic
impact of foodborne illness.

These articles and others cited in the bibliography are good background for
licensed food establishment evaluation. Although literature in the field at
times is conflicting, there are quality evaluation attempts upon which to
base this evaluation project.

A particular effort was made to contact program managers and other experts
for their input and advice.

- Joe Aldegarie, Environmental Health Director, David Feffer, Health Officer, Missoula City-County Health Department, Missoula, Montana.
- Will Selser, Environmental Health Director, Bob Johnson, Health Officer, Lewis and Clark Health Department, Helena, Montana.
- Jim Neely, Environmental Health Director, George Sheckleton, Health Officer, Yellowstone County Health Department, Billings, Montana.
- Tom Cowan, Environmental Health, Bruce McIntyre, Health Officer, Flat-head City-County Health Department, Kalispell, Montana.
- Pete Frazier, Environmental Health Director, Don Pizzini, Health Officer, Cascade City-County Health Department, Great Falls, Montana.
- Emery Nelson, Sanitation Division, Edward King, Health Officer, Gallatin City-County Health Department, Bozeman, Montana.
- Bill Burke, Health Officer, Silver Bow Health Department, Butte, Montana.
- Jim Peterson, R.S., Consultant Sanitarian, Vern Sloulin, R.S., Chief, Food and Consumer Safety Division, State Department of Health and Environmental Sciences, Helena, Montana.

- Denzil Inman, Food Service Specialist, FDA, Denver, Colorado.
- Charles Bartleson, Food Program Consultant, Washington State Health Department, Olympia, Washington.
- Doyle Parton, Salt Lake City Health Department, Salt Lake City, Utah.
- John Insel, Chief, Consultation, Certification and Evaluation, Michigan Health Department, Lansing, Michigan.
- Frank Bryan, Institutional Services Division, Center for Disease Control, Atlanta, Georgia.
- Amer El-Ahraf, Department of Health Sciences and Human Ecology, California State College, San Bernardino, California.
- A. A. Hearne, Environmental Health Services Manager, Department of Health Services, Los Angeles, California.
- Others.

Method of Procedure

Restaurant inspections take more time and resources than inspections of other licensed establishments, so this evaluation will cover only restaurant inspections and not grocery stores, meat markets, bakeries, vegetable markets, caterers, bottlers, other food processors, hotels, motels and trailer courts (which pose the lesser health risk to the public). A second parameter of the evaluation will be the assumption that the restaurant inspection program does reduce the risks of foodborne illness and insures correction of hazards, although, until qualitative research is conducted, the extent of prevention must remain unknown.

Evaluation of the Licensed Food Establishment Program is complicated by the many facets of restaurant inspection. The 44-item inspection form is currently used to record sanitation problems found in restaurants. Criticisms of that system center around (1) lack of sanitarian standardization; (2) variances which can occur in restaurant sanitation from rush hours (holidays, weekends, early morning and late night) to actual inspections done on an 8-5 weekday schedule; (3) the argument put forth by some who say that the inspection form cannot truly reflect disease risk; (4) violation correction and enforcement variations; and (5) measurement of the health impact upon the public.

Taking the myriad problems of restaurant inspection into consideration, most involved in the field do agree, however, that the current inspection methodology remains the best available until more holistic procedures become widespread, hence, the assumption and parameters above.

With those constraints in mind, each licensed food establishment evaluation objective will serve as a specific measure of that part of the program's effectiveness and efficiency. Each objective and its evaluation procedure is designed to be easily modified to fit individual health department data needs. (For example, the time deadline in Objective 4 may be changed to realistically reflect staffing and workload requirements of an individual health department.)

Each evaluation objective will follow the same format: (1) the rationale for the objective will be discussed, (2) methodology to measure attainment of the objective will be detailed, and (3) the uses of the data by program managers will be discussed.

- OBJECTIVES* BY FISCAL YEAR -
1. To establish and maintain the SPIF program to provide complete and timely management data. *Section*
 2. To conduct the restaurant inspection program based on the public's risk of becoming ill after eating at different categories of licensed food establishments. *Section*
 3. To eliminate all 4- and 5-point items found during inspection at least within 10 days of inspection date. *Changed - see pg i*
 4. By *January 1981*, all establishments failing to meet sanitation standards or who have shown a decrease in at least 2 of the past 3 regular inspection scores will have enforcement action taken. *Changed - see pg. i*
 5. To explore the feasibility of conducting a program to determine the incidence of food-borne illness in the county. *Infeasible - see pg. i*
 6. To standardize all sanitarians by *January 1981* so that establishment scores are within 80% of the standardizer's score 100% of the time. *Completed - see Section 1*

7. To determine the costs of conducting the
Licensed Food Establishment Program. See Section 7.1

Objective 1. To establish and maintain the SPIF program to provide complete and timely management data.

Rationale - Licensed food establishment inspection workloads are heavy for most health departments, so having good data from which to base resource allocation is imperative. Inspection programs are more and more tending toward inspecting non-critical establishments less often and inspecting more critical establishments more often (Cox and Wilson,⁹ Kaplan,^{16,17,18} Bader, Blonder, et.al.,² Zaki³⁵). In addition, records of sanitarian consistency, district variation, historical trends of demerit scores and workload are, if kept at all, kept manually, usually by sanitarians.

Methodology - For several years, environmental health personnel in Montana have been interested in a new concept for the Licensed Food Establishment Program known as SPIF (Sanitation Programs Information Formulator). SPIF is a computerized system which takes information from the 44-point inspection form and compiles and files it so that any or all of 22 separate reports can be provided to either program manager or local sanitarian.

Some of the information produced by SPIF include:

- establishment profile listing
 - historical inspection results for each establishment
 - scoring levels and workload per sanitarian
 - violation statistics by type of violation for set time period per locality
 - list of establishments to be inspected within pre-established time frame
 - report on previous inspection results for each establishment
- (See pages 15-16 for complete list.)

The Missoula City-County Health Department has contracted to receive the federally-sponsored software package from the FDA and will begin using SPIF in early fiscal year 1981. The procedure involves:

1. Filling out a Profile Form for each establishment listing the establishment name, ID number, location, type of service, meal volume, water supply, inspection interval, etc. (See page 17).
2. Completing the 44-item inspection form as usual, and then a clerk will key in the information on the terminal.

3. Any of 22 reports can be called up as needed on the CRT terminal and/or paper-printed later.

Staff and management training is provided by SPIF's originators, Opportunity Systems, Inc. as part of the total SPIF package. After training and program installation, the Missoula Health Department and the Missoula Data Processing Department will be responsible for entering the data and running the program.

Use of Data - With the SPIF system, program managers and sanitarians have easy access to detailed, timely and accurate management data. There is also the potential to expand the program later to the sewer system inspection program and for Missoula to conduct contract work for other health departments who would like to receive SPIF data but do not have data processing capabilities.

Objective 2. To conduct the restaurant inspection program based on the public's risk of becoming ill after eating at different categories of licensed food establishments.

Rationale - When the concept of a "relative risk ratio" was introduced several years ago, it was the outgrowth of concern in the field over a way to fairly allocate numbers of inspections to establishments posing different hazards. In effect, an administrator able to predict the foodborne illness risk of each type of food service establishments could increase surveillance of high-risk establishments and decrease surveillance of low-risk types of establishments.

Methodology - Program administrators have expressed a need for a fair and consistent way to allocate their licensed food establishment resources, or restaurant inspections. Some work has been done on a nation-wide basis, most notably Kaplan's relative risk ratio.

In Montana, the Cascade City-County Health Department is working with a "Food Service Establishment Hazard Potential" which takes into consideration the:

- extent of potentially hazardous foods served
- extent of handling and preparation of potentially hazardous foods
- hours of operation
- persons served
- maintenance demand of facility and equipment.

Cascade County is also evaluating the use of four inspection frequencies where Group I is a control group receiving routine twice per year inspections; Group II consists of establishments inspected on a quarterly basis; Group III receives in-depth inspections (i.e., four inspections in one day occurring at 8:00 A.M., 12:00 noon, 5:00 P.M., and 9:00 P.M.); and Group IV is inspected monthly. (For complete explanation see pages 18-22.)

In order to test other methodologies and compare data, this evaluation will consist of developing and testing a risk formula based on information already collected on the "Profile Form" of the SPIF program — type of establishment, type of service, weekly meal volume, sewage, hours of operation, plus inspection score and other factors, each multiplied by a mathematical "hazard factor" to adjust for importance of the problem. For example:

(type of establishment).15 + (type of service).10 + (weekly meal volume).90 + etc. = risk factor

The factors chosen for the Missoula effort were selected because of collection ease and the apparent risks identified by each factor. It is expected that this formula can be run on Missoula's "intelligent terminal!"

Currently, the Cascade and Missoula hazard ratings are to be considered experimental only and each will be analyzed and compared to determine their respective strengths and weaknesses and potential for wide-spread use.

Use of Data - If either or both of the experimental hazard formulas is deemed useful by administrators, data will be available to categorize establishments fairly and consistently so that variable inspection frequency can become a realistic tool for allocating resources.

Objective 3. To eliminate all 4-and 5-point items found during inspection at least within 10 days of inspection date.

Rationale - Items 1, 3, 4, 7, 11, 12, 20, 27, 28, 30, 31, 35, and 41 on the inspection form are 4- and 5-point items and are considered to be the most critical of all possible violations. Because of their importance, both state rule and the FDA's Food Service Sanitation Manual have set a 10-day correction limit. Local health departments have tried to meet the 10 day goal, but in many cases it is a difficult or impossible task.

This objective is meant to quantify the time taken to correct critical items and to more formally examine reasons for non-attainment.

Methodology - A formal protocol will be established detailing each step from marking the 4- and 5-point violations on the inspection sheet to correction of the problem (or non-compliance, if applicable). The purpose of the protocol is to formalize the compliance procedure and to serve as a guide and training tool. The protocol should be regarded as a general guideline, but it is recognized that flexibility must be allowed.

In order to track outcomes of 4- and 5-point violations, each sanitarian will keep the inspection form until the item(s) are corrected (not over 14 working days) before routing the form to the supervising sanitarian (or person in charge of reviewing inspection forms). A brief note must accompany any inspection forms where 4-or 5-point violations were not corrected within 10 days to explain the reason(s) and give an estimated schedule of correction.

DROPPED
See pg. 7

Use of Data - Objective 3 will give program administrators an outcome measure of the effects of restaurant inspections and whether or not the 10 day requirement is workable for their department, as well as give them a record of problems of non-compliance. The protocol, which should be updated as changes occur in local or state regulations, will also serve to assure consistency throughout county-wide compliance actions.

Objective 4. By January 1981, all establishments failing to meet sanitation standards or who have shown a decrease in at least 2 of the past 3 regular inspection scores will have enforcement action taken.

Rationale - Fair and consistent enforcement is an important part of a restaurant inspection program. This objective was established so that a formalized measure can be made of (1) restaurants who fall below "adequate" guidelines and (2) establishments whose inspection scores begin to show a decrease.

Methodology - Either by using the SPIF system's historical report or by keeping historical data manually, the three most recent inspection scores can be examined to see if they meet or exceed established standards. The standards to be used will be:

1. A score of 75 or below on any one of the past three inspections.
2. Any decrease in two of the past three inspection scores and one score of 80 or below.

Establishments falling into either category may be considered "at-risk" and the protocol (Objective 3) may then be followed to insure correction.

At the due date of this survey (January 1981) a review of licensed food establishment files (or calling up the appropriate SPIF report) will reveal restaurants to be placed under corrective action. Those files should then be held out until appropriate action is taken.

Use of Data - Using the standards to trigger corrective action will serve to formalize the enforcement part of the Licensed Food Establishment Program, to identify establishment scores which are falling and need "preventive enforcement," and to show administrators the number of establishments which need corrective action per year (or quarter, as required).

Objective 5. To explore the feasibility of conducting a program to determine the incidence of foodborne illness in the county.

Rationale - Zaki, et.al,³⁵ noted that:

It has been estimated that food poisoning ranks second only to the common cold as the most frequent cause of short-term illness in this county. However, its short duration and mild symptoms in the majority of cases, coupled with extremely poor reporting, have hampered the implementation of intensive food protection programs.

The traditional problem in food service sanitation has been how to (1) prevent and (2) deal with foodborne illness when often the source can never be found or confirmed; when only an estimated 1% of afflicted people ever report their suspected foodborne illness; and when there is no way to measure changes in illness rates with changes in sanitation programs. In fact, Bryan⁴ went so far as to say that:

Administrators cannot now rely on the change in incidence of foodborne disease outbreak in a community to determine the effectiveness of foodborne disease prevention activities.

On the other hand, it has been noted that the public expects to be served safe, appetizing food prepared and handled in a sanitary manner in a clean establishment. While the consumer may judge an eating place entirely upon the basis of observation, the consumer also views the health department as largely responsible for both environment and food safety.

Balancing public health's effectiveness and public demands is difficult at best and good data is sorely needed.

Methodology - The communicable disease and sexually transmitted disease portions of the Community Health Services Evaluation Project both involve

INFEASIBLE - See Page 2

research reporting systems. In that system, foodborne illness is deemed an immediately reportable disease and, as such, is to be reported to the health department by phone within four hours of diagnosis.

Both food sanitation and communicable disease experts will be polled to determine (1) if improved and sustained reporting is possible and (2) if yes, what methodologies have worked for others.

In addition, a small group of emergency room and other physicians, as well as their office staffs, will be contacted by the Health Department with foodborne illness information. The Health Department will work closely with this group, especially encouraging them to report enteric disease, to be comfortable requesting help from the Health Department in case of outbreak investigation and to encourage their patients (through posters or pamphlets) to report suspected food illness. Reporting from this group will be analyzed to see if the concentrated efforts have paid off and if there is indeed a change in numbers of suspected or real foodborne cases reported to the Health Department.

Use of Data - Increased public awareness and cooperation in all events of foodborne illness (whether real or suspected) can be of use (1) to be aware of and track cases back to establishments with sanitation problems, (2) as a long-range measure of community sanitation and changes in the Licensed Food Establishment Program, (3) as a trigger for manager and/or employee training, and (4) as a program planning and resource allocation tool.

Objective 6. To standardize all sanitarians by January 1981 so that establishment scores are within 80% of the standardizer's score 100% of the time.

Rationale - Standardization is important to (1) program administrators so that they may be assured that their sanitarians are conducting restaurant inspections in a consistent and fair manner and (2) sanitarians who, upon standardization, are given the opportunity to further their professional expertise as well as the assurance that if they change areas, their inspections will be uniform and equally impartial.

The general goal of the standardization efforts is to "conduct inspections in all 50 states by competent and qualified sanitarians who consistently and

fairly apply food service sanitation rules."

Methodology - Using the current 44-item inspection form, State Food and Consumer Safety Bureau personnel, standardized by the FDA Regional Food Service Specialist, will be scheduled to standardize at least one local sanitarian who will then be responsible for assuring standardization of the department's licensed food establishment staff. The Food and Consumer Safety Bureau will be responsible for checking and (if necessary) re-establishing standardization at least once per year to insure the inspection scores are maintained at appropriate levels.

In addition, the SPIF program will produce reports detailing consistency or variation in establishment scores, so that standardization progress can be monitored and "relapses" can be corrected.

Use of Data - With the use of the SPIF program or by manually tracking inspection scores, it should be possible to track and note overall changes in county (or individual restaurant) establishment scores to see how much standardization has changed previous levels (Note: Statistics compiled by the Cascade City-County Health Department indicate a direct relationship between sanitarians' workloads and their average inspection scores.) In addition, after standardization is accomplished and during re-checks, a health department is reasonably assured of consistency and accuracy.

Objective 7. To determine the costs of conducting the Licensed Food Establishment Program.

Rationale - As with other parts of the Community Health Service Evaluation Project, cost data is consistently rated as a high priority for program managers. Many agencies are caught between legal and professional obligations, and the money and staff limitations of conducting the myriad of public health programs today. It then becomes more and more difficult to collect accurate and current cost information.

Methodology - Cost worksheets have been drawn up for three other evaluations — Sexually Transmitted Diseases, Communicable Disease and Subdivision Review. The cost computations use the same Overhead Worksheet and similar Cost Worksheets, so it will be easy to familiarize staff with each. The worksheet will cover all direct and indirect cost inputs as well as mileage costs and cost of using the SPIF system.

Because mileage figures are hard to track (sanitarians often conduct five different activities per day) a formula will estimate licensed food establishment mileage:

$$\left(\frac{\text{licensed food establishment salaries}}{\text{total environmental health salaries}} \right) \times \frac{\text{total mileage}}{\text{mileage}} = \frac{\text{estimated licensed food}}{\text{establishment mileage cost}}$$

Use of Data - Cost data is required by program administrators as a means of allocating resources, budgeting, grant-writing, public presentations, and legislative and budget planning.

Implications of Licensed Food Establishment Evaluation Model

Because the Licensed Food Establishment Model will be able to be generalized to fit individual health department needs, it is a very flexible planning tool and as such can be changed to fit other health department needs. Missoula's final evaluation results will be available to any administrator who would like to use the data as a comparison or as a reference.

The evaluation methodologies described are designed to be continued from year-to-year in order to give a time series for yearly comparison. As staff become familiar with the procedures, use of employee time will diminish.

There is a fair amount of evaluation data already published on inspection frequency, program effectiveness and outbreak analysis. The data this evaluation project will produce should be added to the already existing body of knowledge so that the state of the art can continue to grow.

J.S. Hand
MCCHD
May 1980

LICENSED FOOD ESTABLISHMENT EVALUATION SUMMARY

| INSTRUMENT: | TO MEASURE: | PROCEDURE: | OBJECTIVE: |
|--|---|---|------------|
| SPIF (Missoula) Training (March 17-19) Installation (April 14-18) Fill out Profile Forms - begin to use system (May 1) | To provide data to management and sanitarians | Fill out Profile Form on each restaurant, compile data, enter information from 44-item inspection form, enter information and call up reports on CRI. | 1 |
| Risking Score and comparison with Cascade City-County Health Department. | Risks of becoming ill after eating at different categories of Licensed Food Establishments. | Formula with factors weighted by estimated risk (compare with Cascade County's score.) | 2 |
| Protocol for Critical Item Correction | To insure consistency in correction restaurant violations and measure outcome of Licensed Food Establishment Program. | Write, test and use protocol | 3 |
| Sanitarian Review of Critical Violation Correction Outcome | Outcome of critical item correction (time, long-term effects, etc.) | Separate file for critical item correction letter, results - reviewed once per quarter with short findings report. SPIF also. | 3 |
| Restaurant Sanitation Standards | Establishments in need of corrective action and those requiring preventive action. | Compare last three inspection scores to see if they exceed standards. Take appropriate corrective action. | 4 |
| Foodborne Illness Incidence | Incidence, trends and changes in foodborne illness in county. | Explore feasibility. | 5 |
| Standardization | Consistent and uniform food service sanitation inspections. | Insure standardization of all sanitarians by standardized sanitarian with a recheck by State and/or FDA Food Service Specialists. Recheck. | 6 |
| Licensed Food Establishment Cost Worksheet | Costs of conducting Licensed Food Establishment Program | Fill out provided worksheet quarterly, yearly, etc. | 7 |

STP

Bureau of Foods
Division of Food Service, HFF-220
200 C Street, S.W., Room 3025
Washington, D.C. 20204
Phone: (202) 245-1508

U.S. Department of Health, Education, and Welfare
Public Health Service • Food and Drug Administration

STPif

an automated
data processing system for
food service sanitation programs.

SPIF stands for Sanitation Programs Information

Formulator. It is an automated data processing system for food service sanitation programs. It files data, it produces reports, it merges, produces letters and labels and otherwise serves the specific needs of those working directly with food service programs.

One of the sanitation is the key to successful food service sanitation. SPIF has been designed with this perspective paramount. A nationwide study of sanitation and food service program needs was conducted prior to the creation of SPIF. The system was tested and refined in a real life setting—the state of Maryland—for a trial year. With the direct assistance of the Maryland program personnel, SPIF was further tailored to the variety of user needs it now serves. The result is a total package including programmed instruction materials for sanitarians, and the latest system of modular computer programming to accommodate potential state initiated modifications. SPIF is low cost, easy to use and easy to operate.

FDA is now making SPIF available to state food service programs. Limited technical services, software, documentation, training materials, and certain start-up and demonstration costs can be provided by FDA through Opportunity Systems Incorporated (OSI)—the contractor.

What Do You Get With SPIF?

The contractor may provide the states with on-site briefings designed to prepare state personnel for implementation. OSI has developed a complete training package which is directed to the sanitarian, but is an excellent primer for all users. It is an audio-visual package including a programmed text and a tape cassette for self-instruction. These materials are presented using terminology with which the sanitarian is familiar and comfortable.

What Are the Components of SPIF?

A complete guide to SPIF, its features and applications, has been prepared for program managers. This book includes suggestions for input/output scheduling (submission of forms for processing and production and distribution of reports), estimates of man-hours for SPIF tasks, detailed report descriptions, and other aspects of SPIF implementation.

What Are the Components of the SPIF System?

There are three sets of programs that make up the SPIF system. These are:

- The Report Generating System (9 programs)
- The File Maintenance System (5 programs)
- The Mailing System (2 programs)

All programs are written in ANSI COBOL and are compatible with most hardware systems. Further, in anticipation

tion of the fact that some people tend to wish to modify some of the reports, the Report Generating System has been prepared in a SPICUT (SPIF EDITOR) PROGRAM format. This format was developed by OSI to provide a uniform methodology of programming such that the interpretation and modification of a program by someone other than the original author becomes considerably simplified.

The programs are accompanied with complete detailed documentation including both system and program flowcharts.

What Do You Get With SPIF?

FDA provides on-site start up assistance through teams implementation. This means that both management and systems consultants from OSI provide concentrated guidance for participating states in support of the specialized materials described above.

What Does SPIF Produce?

SPIF produces a variety of tables, according to a frequency which can be dictated by program needs. File listings, and specialized letters and labels for mass mailings. SPIF reports are aimed at three tier program management—specific report distributions vary for sanitarians, local management, and state management at the discretion of participating states. The following are standard SPIF reports:

- Establishment Profile Listing
- Report on Previous Inspection Results for Each Establishment
- Historical Inspection Results by Establishment for Prescribed Time Periods
- Historical Inspection Results by Violations for Each Establishment for Prescribed Time Periods
- Violation Statistics and the Ratio of Violations to Number of Inspections for Each Sanitarian
- Violation Statistics, and Norm Deviations from State/County Ratios for Each Sanitarian
- Scoring Levels and Workload (in terms of inspection types) for Each Sanitarian
- Establishment Violation Statistics for Prescribed Time Periods by Sanitarian and Locality
- Inspections by Type of Establishment and Type of Inspection for Each Sanitarian
- Violation Statistics by Most Points Lost for Each Violation for Prescribed Time Periods
- Summary Rank Ordered Analysis of Violation Frequencies
- Scoring and Inspection Distributions by Weekly Meal Volume
- Distribution of Establishments by Type of Service and Weekly Meal Volume for Each County
- Scoring Levels and Inspection Frequencies by Type of Service
- Violation Statistics by Type of Violation for Prescribed Time Periods for Localities
- Violation Statistics by Category of Violation for Prescribed Time Periods for Localities
- Inspection Frequency and Scoring Levels by Types of Establishment for Localities
- Roster of Establishments To Be Inspected Within Time Periods
- Listing of Establishment Profile Actions and Updates
- Listing of Inspection Actions and Updates
- Various Error Listings

Food Service Establishment Profile Form

| | | | | | | |
|------------------------------|--------|-------|----------|---|------------------------|-------------------------|
| Establishment I.D. [1-10] | County | Dist. | Est. No. | Action Add 11-1 Delete 3 Re-activate 5 Change 2 Activate 4 | Sanit. Code [12-14] | Census Tract [15-17] |
|------------------------------|--------|-------|----------|---|------------------------|-------------------------|

1. Name of Establishment [18-41]

2. Street Address [42-65]

80 - (1)

3. City [15-36]

4. State Code [37-38]

5. Zip Code [39-43]

6. Activation Date [44-49]

7. Type of Establishment [50-52]

| | |
|----------------------------|------|
| 8. Type of Service | |
| a. Sit-down | 53-1 |
| b. Cafeteria/Buffer | 2 |
| c. Carryout (fast service) | 3 |
| d. Caterer (comm.) | 4 |
| e. Interstate Conveyance | 5 |

| | |
|-----------------------|------|
| 9. Weekly Meal Volume | |
| a. Less than 500 | 54-1 |
| b. 501-1,000 | 2 |
| c. 1,001-4,000 | 3 |
| d. 4,001-8,000 | 4 |
| e. More than 8,000 | 5 |

| | |
|------------------|------|
| 10. Water Supply | |
| a. Public | 55-1 |
| b. Private | 2 |
| c. Other | 3 |

| | |
|------------|------|
| 11. Sewage | |
| a. Public | 56-1 |
| b. Private | 2 |
| c. Other | 3 |

| | |
|------------------------|------|
| 12. Permitted/Licensed | |
| a. Yes | 57-1 |
| b. No | 2 |

| | |
|-----------------------|------|
| 13. Certified Manager | |
| a. Yes | 58-1 |
| b. No | 2 |

14. Inspection Interval [59-61]

15. Secondary I.D. Code [62-74]

80 - (2)

MISSOULA COUNTY HEALTH DEPARTMENT

1000 17TH AVE. SOUTH

GREAT FALLS, MONT. A 59405

1000
1000

February 26, 1980

Ms. Janice Hand
Missoula City-County Health Dept.
301 W. Alder
Missoula, Montana 59801

Dear Ms. Hand:

In response to your telephone call on the afternoon of February 25, with regard to our Food Service Inspection and Evaluation Program, I submit the following to you.

With regard to the different groups that are being evaluated within the project: GROUP I is the control group that receives the routine inspection of twice a year. GROUP II is those establishments that are inspected on a quarterly basis and GROUP III is the in-depth inspections group, which are inspected twice annually. GROUP IV are those inspected on a monthly basis.

An in-depth inspection would consist of an inspection carried out at selected intervals during any given day; with the idea to document the kinds of problems observed during the many operations that the food service includes. Therefore, a spot check of the establishment for one hour at eight o'clock in the morning might be followed up with a visit during the lunch hour, then again around four or five o'clock and possibly another check into the establishment in the evening. The questions we hope to answer with the in-depth inspection are: Do the in-depth inspections provide additional information that is useful in improving sanitation, and reducing the risk of illness? Do inspections conducted in-depth result in high demerit scores? Do in-depth inspections provide a greater benefit to some kinds of establishments more than others? Do in-depth inspections provide for an increase in the long-term sanitation level? And finally, is the current inspection form suitable to accurately record the results on in-depth inspections?

The determination of a hazard rating for an establishment is simply an additional assessment of those items on the inspection check list that directly contribute to food-borne illness. Generally, those factors are listed in the CDC information, and basically refer to the items 1-13 on the new food service form. For example, if Item 3 were in violation on an inspection and it was the only violation reported, the normal rating score would be a 95. If it were determined that Item 3 were in violation in three different areas within the food establishment, then they would be given a hazard rating, based on the original rating plus the additional incurred violations on the first 13 items. Therefore, hazard rating is equal to the demerit score (in terms of the numbers subtracted from 100) plus the weighted additional items of the first thirteen items. A typical report would be as follows: rating score: 85; therefore, the number of demerits would be 15 plus additional weights from multiple violations of the first 13 items; therefore, if item 3 were in violation on two occasions within the establishment, then the rating score would be 85 and the hazard rating would be 20.

The hazard potential of an establishment is done on the enclosed rating form. In general, under extend of potentially hazardous food served; they get 1 point if they have milk or milk products, additional point if they have eggs, additional point if they handle meat & poultry, additional point if they have fish or shell fish, and additional point if they have other ingredients capable of supporting rapid and progressive growth of micro-organisms. Therefore, a fast-food place that serves only hamburgers and milk products would only be given a two for the extent of potentially hazardous food served.

Extend of handling and preparation of potentially hazardous foods: all food establishments will receive one for receiving potentially hazardous foods in any form and storing it in their licensed premises. If food is stored in its most static state, no additional points are assigned. (Static state shall mean covered, frozen, dried.) If any food is refrigerated, an additional point is given.

Three - an additional point is given for a change of state of any food, frozen meat thawed, canned food opened, dried food reconstituted. Raw to cook does not count as a change of state.

Four - incorporation of any product into a recipe receives a point.

Ms. Janice Hand
501 W. Alder
Missoula, Montana
February 26, 1980
Page 3.

Five - restorage of a prepared product receives a point.

Six - storage of service at hot or cold temperatures, i.e., salad bars, steam tables for more than one hour, receive a point.

Hours of operation - All points are assigned as follows:
Less than eight hours - one point; eight hours - two points; between eight and twelve hours - 3 points; twelve-twenty-four hours - four points; twenty-four hours - five points.

Persons served is hard to calculate. I think that generally one can get an idea of whether they are high or low volume establishments and rate them accordingly.

Maintenance demands of facility and equipment answers the following basic questions:

To what extent is the facility suited for the function that it is trying to perform and Are there serious structural and facility problems that demand a lot of maintenance - cleaning and other activities that subtract time from those efforts that need to be directed toward the food operation. This is, of course, somewhat subjective too, but we feel that, for example, a small establishment with old equipment that is trying to put out a full-scale menu and has numerous structural problems should receive the maximum of five points.


The final factor used in assessing establishment performance is called a Performance Rating or Performance Ratio. This is the hazard potential (HP) divided by the hazard rating (HR). For example, if the HP is 17 and the HR is 24, the performance ratio (PR) is .71. ($17/24 = .71$) as the HR decreases the PR increases. The performance ratio is a valuable and objective tool in planning and programming an assessment of a food service program, since it provides more meaningful information about an establishment. It appears that in looking at the hazard potential and performance ratio, the hazard potential differentiate between those establishments with the greatest potential for a problem and the performance ratio indicates those establishments with the greatest probability for a food borne illness problem. The performance ratio allows for determining which establishments need more attention, allows for a comparison of the establishments regardless of type and allows for an assessment of the total food service program on an annual basis.

Ms. Janice Hand
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February 26, 1980
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I hope this has been of some value. Please remember that this project is highly experimental at this point so there may be numerous improvements and refinements forthcoming. A statistical analysis has yet to be done on the four groups. Please contact this department if we can be of further assistance.

Sincerely,

CITY-COUNTY BOARD OF HEALTH


Peter M. Frazier
Environmental Health Coordinator

PMF/al

CITY-COUNTY HEALTH DEPARTMENT
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FOOD SERVICE ESTABLISHMENT
HAZARD POTENTIAL

ESTABLISHMENT: _____
DATE OF RATING: _____

| | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| 1. Extent of Potentially Hazardous Foods Served | | | | | |
| 2. Extent of Handling and Preparation of Potentially Hazardous Foods | | | | | |
| 3. Hours of Operation | | | | | |
| 4. Persons Served | | | | | |
| 5. Maintenance Demand of Facility & Equipment | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

HAZARD POTENTIAL _____
(Total of above items)

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